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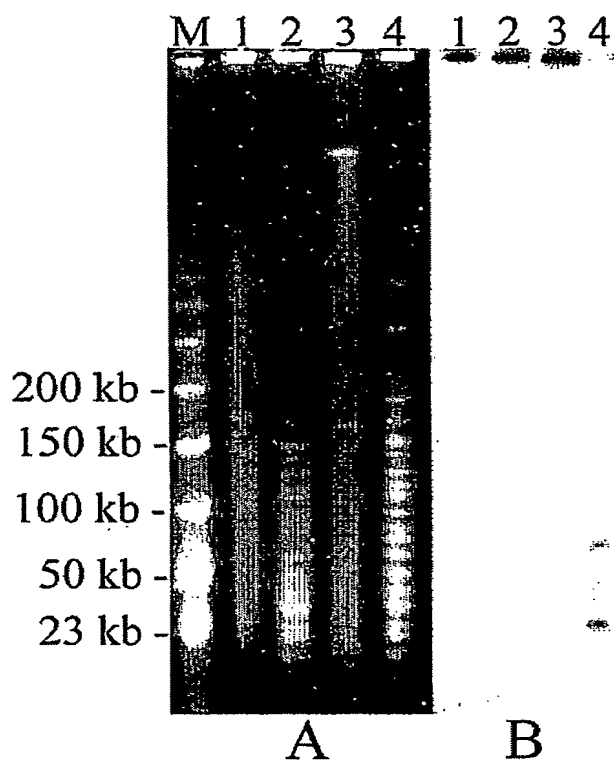


FIGURE 1A

FIGURE 1B

BEST AVAILABLE COPY

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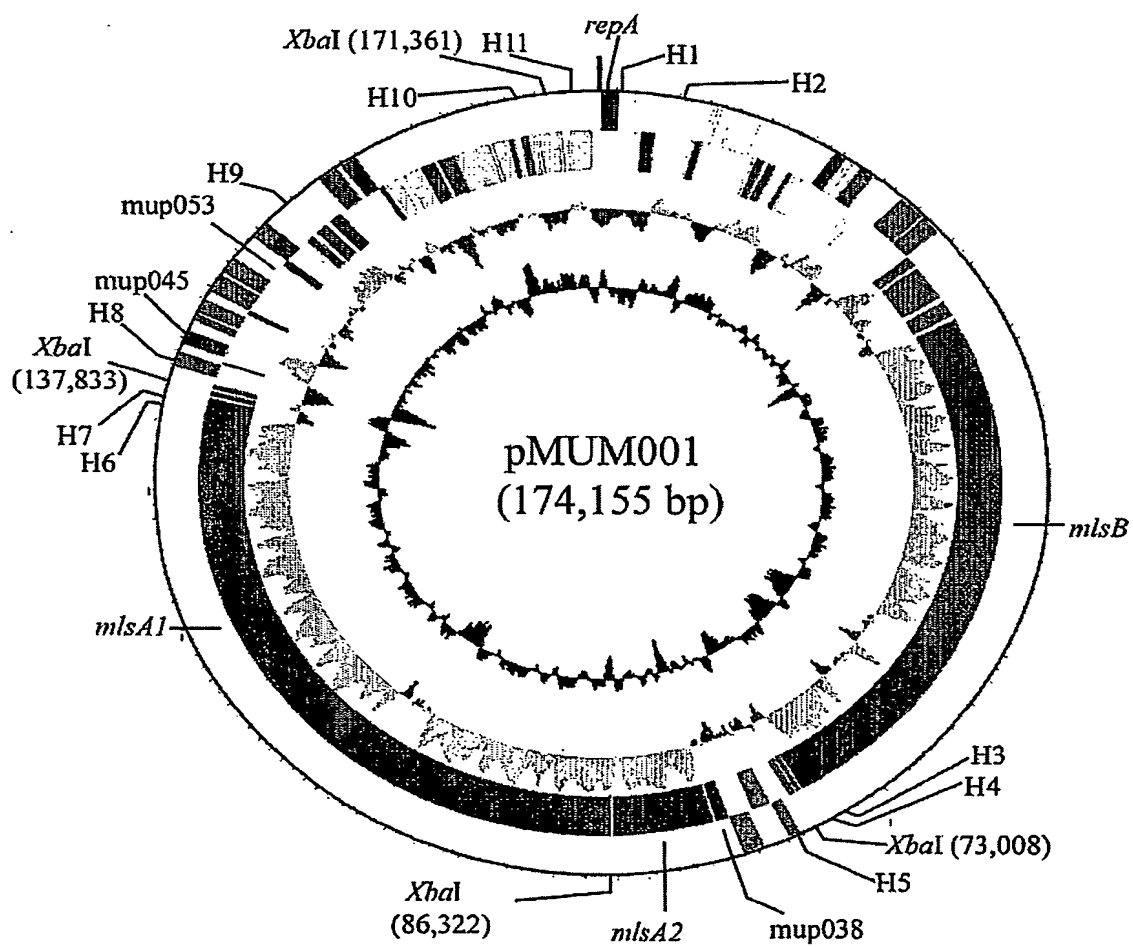


FIGURE 2

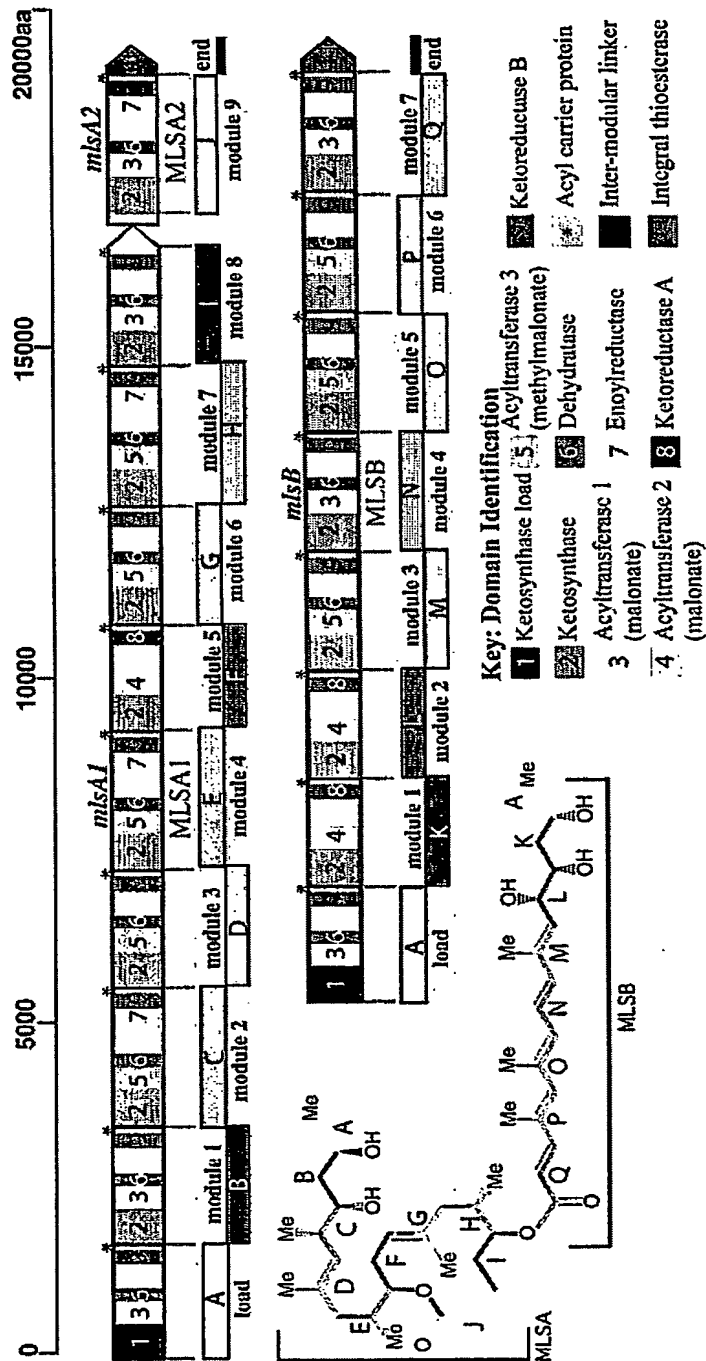


FIGURE 3

FIGURE 4A

FIGURE 4B

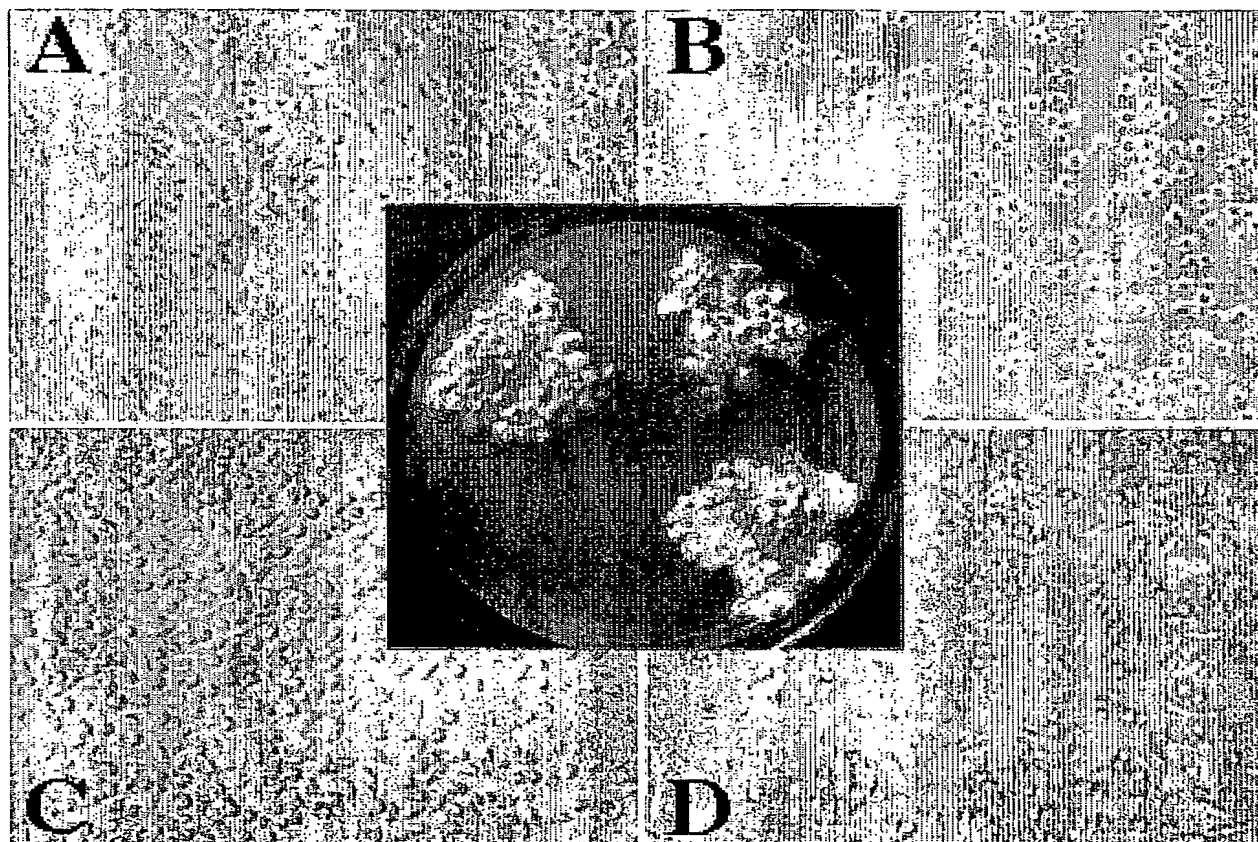


FIGURE 4C

FIGURE 4D

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FIGURE 5A

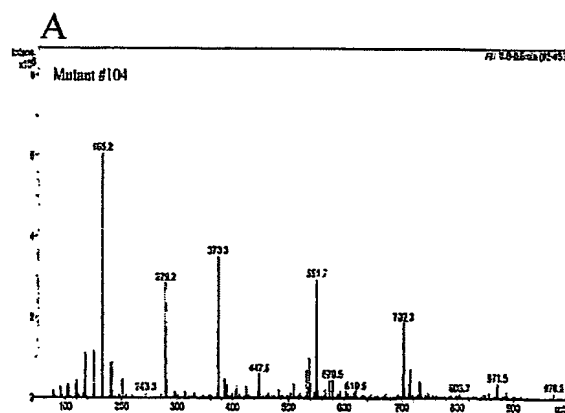


FIGURE 5B

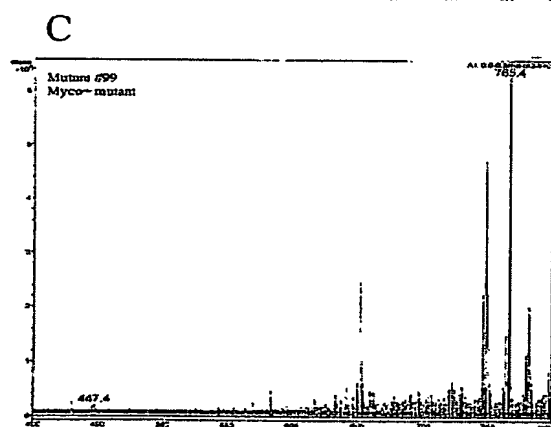
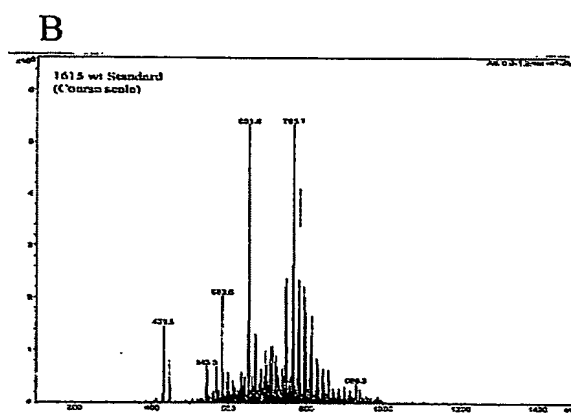


FIGURE 5C

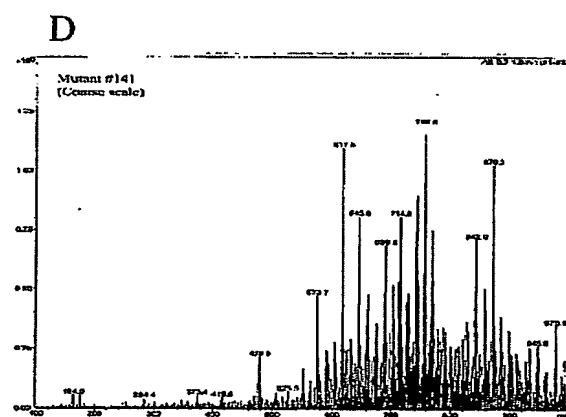


FIGURE 5D

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MslA1 gene

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201 gaccgatgag caacgatcag cgcttcggca tggcgccttt cttgatgacg
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FIGURE 6

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2951 tcgctgaccg tgccggatat tcctcggtea acgaactgat cgtgcacacc
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FIGURE 6(continued)

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FIGURE 6(continued)

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FIGURE 6(continued)

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11951 cccagccac cttgcccgcg accttgacag tcgaccaacc cagccccac
12001 atcgactggg ccagcgccac agtccgactc ctaaccgagc ccatccaatg
12051 gcccaacacc gaccaccccc gcaccgcggc ggtgtcctca ttcggcatca
12101 gcggcaccaa cgcaccctc atcctccaac aacccccac ccccgacacc
12151 acacaaacc ccaaccccc aacaggttct gatcccgag tgggttctga
12201 ttccgcagtg ggttctgatc ccgcagtggt tgtactgggt tggccgttgt
12251 cagcgcgttc agcgcggggg ttaagcgcac aagcggcccg tctgtaccag
12301 catctcagcg cccacccccga tctggatccg atcgatgtag cccacagcct
12351 ggctaccaca cgcagccacc acccccaccg cgcaccatc accaccagca
12401 ttgagcacca cagcgaaaac aaccacgaca caaccgatgc gctggccgca
12451 ctgcacggcc tggccaacaa cggcacacac cccctgctga gcagaggcct
12501 gctgacccca cagggccccc gcaaaacagt gttcgtgttc cccggacagg
12551 gcagtcaata ccccggcatt ggccgagatc tctaccgcca attccccgtg
12601 ttgcgccacg ccctcgacgc atgcgacgca gcgttacagc ctttactgg
12651 atggtcggtg ctagctgtgt tacacgacga acccgaggcc ccgtcgttgg
12701 agcgagtoga tgtggtccag cctgtgttgt tctcgggtgt ggtgtcgtta
12751 gccgactctt ggccgtgggc cggaatcacc cccgatgcag tcacggcca
12801 ctcccagggc gagatcgccg cggcacatgt ggccggagcc ctgaccttgc
12851 ccgaagcagc tgcggtagtg gctttgcgca gccgtgtctt gaccgaactg
12901 ccggttcggt gtgccatggc ttcagtgtta tcgcccaggg aaccactgac
12951 ccagctgctg gcacggtggg acggcaagat cactgtcgcc gcagttaacg
13001 gcccgcctag cgctgtggtc tccggcgata ccacagcgat caccgaattg
13051 ctgattacct gcgaacacga aaacatcgac gctcgcgcta tcccggtgga
13101 ctaccctctt cattccccct atatggaaca catccgcat cagttcctcg
13151 acgagctacc cgagctgaca ccgcggccat caaccatcgc gatgtattcc
13201 accgtcgacg gcgaacctca cgacaccgcc taogacacca ccacaatgac
13251 cgcggactac tggatccgca acatccgtaa cactgtccgg ttocatgaca
13301 ctgtcgtcgc cctgtcggg gcgggtgagc aggttttctt ggaactttca
13351 cctcacccgg tgttgacaca agcgatcacc gacaccgtcg aacaagccgg
13401 cggcggcggc gcagcagtcg cagctctacg caaggatcgc cctgatgctg
13451 tcgcgttcgc tgcagcactc ggccagctgc actgccatgg catcagccca
13501 tcttgaatg ttctttactg ccaggcccg cccctcacac tgcccaccta
13551 cgctttccag catcagcggtt actggctgct gccaccgcgt ggtgatttca
13601 gcggggccaa taccacgcc atgcatccgc tgcagacac cgccaccgaa
13651 ctggccgaaa accgcggatg ggtgttcacc ggccggatca gccacgcac
13701 ccaaccatgg ctaaacgaac acgccgtcga atcagccgtg ctgttccag
13751 gcaccggatt cgtcgagcta cgctgcatg tcgctgaccg tgccggatat
13801 tctcgggtca acgaactgat cgtgcacacc cccctgctac tcgctggcca
13851 cgacaccgcg gatctacaga tcaccgtcac cgacaccgat gacatgggac
13901 ggcagtctct taacatccac tcgcgcccac atatcgccca tgacaacacc
13951 accaccggcg atgaacaacc cgagtgggtc ctgcatgcca gcgcagtcct
14001 gaccgcacaa accaccgacc acaaccacct cccctaacc cctgtgccgt
14051 ggccctccacc cggcacagcc gcgatcgagg tggatgactt ctacgacgac
14101 ctggctgcac agggctacaa ctacggcccg acattccaag gtgtgcaacg
14151 gatatggcgt gaccacgcca caccgatgt catctacgcc gaagttgaac

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FIGURE 6(continued)

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14201 taccogaaga caccgacatc gacggctacg gcatocaccc cgccctattc
14251 gacgcogett tacaccccct actcgccctg acccaacccc ccaccaacga
14301 caccgatgac accaacaccg cagacaccgg tgaccagggtg cggtgcccct
14351 acgcctttac cggcatcagt ttgcacgcca cccacgccac ccgattacgg
14401 gtacggctga cccgtaccgg cgcgatgcc atcaccgtgc acaccagtga
14451 caccaccgga gccccgggtg cgatcatcga ctcattgatc acccgccccc
14501 tcaccaccgc cacagggtct gctcgggcaa ccacagcagc tggcctaacta
14551 oacctgagct ggccaccaca ccctgacacc acgaccgaca ccgacaccga
14601 caccgatgcc ctgcggtatc aggtgatcgc cgaacccact caacaactgc
14651 cccgctacct gcacgacctt cacaccagca ccgacctgca caccagcacc
14701 accgaagcag acgtggttgt gtggccggta ccggtgcccc gcaacgaaga
14751 gctccaggca caccaagcat ccgacaccgc ggtgtcttct cggatacaca
14801 ccttgaccgg ccaaactctt accgtggtgc aggactggct cactaccccc
14851 gacaccaccg gcacccgact ggtcatcgtg acccgccacg gcgtcagcac
14901 cagtgccccc gaccgggtcc ccgacctagc ccacgcccga gtgtggggcc
14951 tgatccgcag cgcccaaaac gaacaccccg gacgcttcac actgctcgac
15001 accgacgaca acaccaacag cgacaccctc accaccgccc taacctgccc
15051 aaccgcgaa aaccaactgg ccatacgccg cgacaccatc cacatcccc
15101 gcctgaccgg caccgctgtc ctgacaccac ccgacagcgg cccctggcgc
15151 cttgacacca ccggcaaggg tgatctggcc aacctcgccc tgctaccgac
15201 cgccacact gccctggcct ctggacaaat ccgtatcgat gtccggggccg
15251 ctggtttgaa ttttcacgac gtggtcgtcg cgttggggct aatccccgac
15301 gacggattcg gcggagaagc gcgcgggggtg atcagcgaga tcggtcccga
15351 cgtctacgga ttgcgcgtgg gtgatgccgt gaccggcatg accgtctctg
15401 gtgcgtttgc cccagcaact gtgcgtgatc accgcatggt gatgacgatc
15451 ccggcccggt ggtccttccc ccaagccgca tccataccgg tggatttctt
15501 gaccgcctac atcgcttttg ccgagatctc gggcctaagc cgagggaac
15551 gagtgctgat ccattgcggc actggcgggtg tgggtatggc tgcgattcaa
15601 ttggcacacc atttggtggtc cgaagtattc gccaccgcca gcgcgcgaa
15651 atggagcacc cttgaggcac tgggggtacc gcgcgaccat atcgcttctt
15701 cgcgtactct ggacttttcc aacgcattcc tcgatgccac caacggcgcc
15751 ggtgttgatg tcgtattgaa ctgcctcagt ggtgaattcg tcgaagcatc
15801 cctagccctg ctgccccgog gtggccattt cgtcgaaatc ggcaaaaccg
15851 acatccgtga taccgaggtc atcgccgcaa cccatcccgg cgtcatttac
15901 cgcgcctcgc atctgctcag cgtctcccc gatcacatcc agcgcacact
15951 ggcccaactg tccccactgt ttgccaccga caccctaaaa cccctaccga
16001 ccactaatta cagcatctac caagccatct cggccttacg tgacatgagt
16051 caagcccgtc acacaggcaa gatcgtgctc actgcgcggg tgggtgtaga
16101 tcctgagggc acggtgttga tcaccggggg gaccgggacg ctgggtgcct
16151 tgttcgccga gcactctggt tctgcccatt gtgtccggca tctgttgttg
16201 acctcgcggc gcggacctca ggcccacggt gccaccgatc tgcagcagcg
16251 gctcaccgat ctagggtgctc atgtcaccat cacggcctgc gatatcagcg
16301 accccgaagc actggccgccc ctggtcaatt cagtgccac acaacaccgt
16351 ttaaccgcgg tagtgacacac cgccgtggta ttggccgaca ccccggtcac
16401 cgagttgacc ggcgatcaac tcgaccagggt gctggccccc aaaatcgacg
16451 cggcatggca gctgcaccaa ctacactacg aacacaacct gtctgcattc
16501 atcatgttct cgtccatggc cggaatgata ggcagtcccc gtctgggtaa
16551 ctacgcggca gccaaacacc cgttagatgc tctcgccgac taccgccacc
16601 gcctgggctt ccccgcgacc agcctggcct ggggctactg gcagaccgac
16651 accggtctca ccgcgcatct aaccgatgta gatctagccc gcatgaccgc
16701 cctgggtttg atgcccacgc ccaccagcca cggactggcc ctgttcgatg
16751 ccgcctcgc caccggacag cccgtttcga taccgcccc gatcaacacc
16801 cacaccctgg cccgacacgc ccgcgacaac accctggccc cgatcctgtc
16851 tgcgctgate accacaccac ggcccggggc ggcctctgcc gcaaccgatc
16901 tcgctgcccg cctcaacgga cttagccccc aacagcaaca acaaacactg
16951 gccaccctcg tggccgoggc caccgccacc gtgctggggc accacacccc
17001 cgaaagcatc agcccagcca ccgcgttcaa agacctcgga atcgattcgc

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FIGURE 6(continued)

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17051 tgaccgccct tgaactgcgc aacaccctca cccacaacac cggcctcaac
17101 ctttcgtcca ctcttatctt cgatcacccc acaccccatg cgggtggcga
17151 gcatctgctt gaacagatcc ctggcatcgg tgccctggtg ccggctccgg
17201 tggatgatcg agctggtcgt accgaggagc cgggtggcgg ggtggggatg
17251 gcgtgtcgtt tccccgggtg tgtcgcatac gcggatcagt tgtgggactt
17301 ggtgatcgct ggccgtgatg ttggtgggtaa ttttcgggcc gatcggggtt
17351 gggatgtgga gggactgttt gatcccgatc cggacgcggg cggcaaaacc
17401 tacacccggt acggcgcggt ccttgacgat gcggcagggt ttgatgccgg
17451 gttcttttgg atctctccac gggaggcagc cgcgatggac ccccagcagc
17501 ggctgctgct ggaggtgtgc tgggaagcgc tagaaaccgc gggatttccc
17551 gcgcacacct tggccggcac ctccaccggg gtattcgtcg gagccggggc
17601 ccagtcctac ggcgccacca actccgatgg cgctgagggg tatgcgatga
17651 ccggcggcgc gatcagcgtc atgtccggcc gtatcgcta cacttgggc
17701 ctagaaggtc cagcgatcac cgttgacacc gcctgctcgt catcgctggt
17751 ggcaattcac ctggcctgcc aatccttacg caacaacgaa tcccagctag
17801 cactggccgg cggcgtcacc gtgatgagca cactgcgat tttaccgag
17851 ttctcccgcc aacgcggcct ggccccagat ggacgctgca aagccttcgc
17901 cgctaccgcc gatggcaccc gctttggtga aggcgcgcgc gtcttggtcc
17951 ttgaacggct ctccgaggcc cgccgcaaca accaccggg ccttgcgatc
18001 gtcgctggat cggcgatcaa ccaagacggc gcatccaacg gactgaccgc
18051 accccacggc ccgtcacaac aacgcgtcat caaccaagca ctagccaacg
18101 ccggcctcac ccacgaccag gtcgacgcgc tcgaagccca cggcaccggc
18151 accacactgg gtgaccccat cgaagccagc gccctacacg ccacctacgg
18201 ccaccaccac acgcccgatc aaccgctttg gctgggatcc atcaaatcca
18251 acatcggccca caccgaagcc gccgcggcgc ccgcgggtgt ggtcaagatg
18301 atccaagcca tcaccacgcg caccttgccc gccaccttgc acgtcgacca
18351 acccagcccc cacatcgact ggtccagcgg cacagtccga ctctaaccg
18401 agcccatcca atggcccaac accgaccacc ccgcaccgcg ggcggtgtcc
18451 tcattcggca tcagcggcac caacggccac ctcatcctcc aacaaccccc
18501 caccocggac accacacaaa ccccaaacac cacaacaggt tctgatcccg
18551 cagtgggttc tgattccgca gtgggttctg atcccgaggt ggggtgtactg
18601 gtgtggccgt tgtcagcgcg tttagcgccg ggggttaagc cacaagcggc
18651 ccgtctgtac cagcatctca gcgcccaccc cgatctggat ccgatcgatg
18701 tagccacag cctggctacc acacgcagcc accaccccca ccgcgccacc
18751 atcaccacca gcattgagca ccacagcgaa aacaaccacg acacaaccga
18801 tgcgctggcc gcactgcacg ccctggccaa caacggcaca cccccctgc
18851 tgagcagagg cctgctgacc ccacagggcc ccggcaaaac agtgttcgtg
18901 ttcccggac agggcagtc aatcccggc atgggocgag atctctaccg
18951 ccaattcccc gtgttcgccc acccctcga cgatgcgac gcagcgttac
19001 agcctttcac tggatggtcg gtgctagctg tgttacacga cgaacccgag
19051 gcccgcgtgt tggagcgggt cgatgtggtc cagcctgtgt tgttctcggt
19101 gatggtgtcg ttagccgcac tctggcgggt ggccggaatc acccccgatg
19151 cagtcatcgg cactcccag ggcgagatcg ccgcggcaca tgtggccgga
19201 gccctgacct tgcccgaagc agctgcggta gtggctttgc gcagccgtgt
19251 cttgaccgac ctggccgggt ccggtgccat ggcttcagt gctatgcccg
19301 aggaaccact gaccagctg ctggcacggg gggacggcaa gatcactgtc
19351 gccgcagtta acggcccgcc tagcgtgtg gtctccggcg ataccacagc
19401 gatcaccgaa ttgctgatta cctgcgaaca cgaaaacatc gacgctcgcg
19451 ctatcccggg ggactacccc tctcattccc cctatatgga acacatccgc
19501 catcagttcc tcgacgagct acccgagctg acaccggcgc catcaaccat
19551 cgcgatgtat tccaccgtcg acggcgaacc tcacgacacc goctacgaca
19601 ccaccacaat gaccgcggac tactggtacc gcaacatccg taacactgtc
19651 cggttocatg aactgtcgc tgccctgctc gggcggggtg agcaggtttt
19701 cctggaactt tcacctcacc cgggtgttgac acaagcgatc accgacaccg
19751 tcgaacaagc cggcgcgccg ggcgcagcag tgccagctct acgcaaggat
19801 cgccctgatg ctgtcgcgtt cgctgcagca ctccggccagc tgcaactgcca

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FIGURE 6(continued)

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19851 tggcatcagc ccacctctgga atgttcttta ctgccaggcc cgccccctca
19901 cactgcccac ctacgctttc cagcatcagc gttactggct gctgcccacc
19951 gctggtgatt tcagcggggc caataccac gccatgcac cgctgctaga
20001 caccgccacc gaactggccg aaaaccgcgg atgggtgttc accggccgga
20051 tcagcccacg caccacaacca tggctaaccg aacacgccgt cgaatcagcc
20101 gtgctgttcc caggcaccgg atttgtcgag ctacgctgc atgtcgctga
20151 ccgtgccgga tattcctcgg tcaacgaact gatcgtgcac accccccctgc
20201 tgctcgctgg ccacgacacc gcggatctac agatcaccgt caccgacacc
20251 gatgacatgg gccggcagtc tcttaacatc cactcgccgc cacatatcgg
20301 ccatgacaac accaccaccg gogatgaaca acccgagtgg gtcctgcatg
20351 ccagcgcagt cctgaccgca caaaccaccg accacaacca cctcccccta
20401 acgcctgtgc cgtggcctcc acccggcaca gccgcgatcg aggtggatga
20451 cttctacgac gacctggctg cacagggtct caactacggc ccgacattcc
20501 aagggtgtga accgatatgg cgtgaccacg ccacaccgga tgtcatctac
20551 gccgaagtgt aactaccgga agacaccgac atcgacggct acggcatcca
20601 ccccgcccta ttcgacgcgc ctttacaccc cctactcgcc ctgaccaaac
20651 cccccaccaa cgacaccgat gacaccaaca ccgcagacac cggggaccag
20701 gtgcggctgc cctacgcctt taccggcatc agtttgacg ccaccacgc
20751 caccgattg cgggtacggc tgacccgta cggcgccgat gccatcaccg
20801 tgcacaccag tgacaccacc ggagccccgg tggcgatcat cgactcattg
20851 atcaccggcc ccctcaccac cgccacaggg tctgctccgg caaccacagc
20901 agctggccta ctacacctga gctggccacc acaccctgac accacgaccg
20951 acaccgacac cgacaccgat gccctgcggt atcgggtgat cgccgaacce
21001 actcaacaac tgccccgcta ctgcacgac ctacacacca gcaccgacct
21051 gcacaccagc accaccgaag cagacgtggt tgtgtggccg gtaccggtgc
21101 ccagcaacga agagctccag gcacaccaag catccgacac cgcggtgtct
21151 tctcggtac acaccctgac ccgcaaaca cttaccgtgg tgcaggactg
21201 gctcactcac ccgacacca ccggcaccgg actggtcatc gtgaccggcc
21251 acggcgtcag caccagtgc caccgaccgg tccccgacct agcccacgcc
21301 gcagtgtggg gcctgatccg cagcgcccaa aacgaacacc ccggacgctt
21351 cacactgctc gacaccgacg acaacaccaa cagcgacacc ctcaccaccg
21401 ccctaaccct gccaacccgc gaaaaccaa tggccatacg ccgcgacacc
21451 atccacatcc cccgcctgac ccgacacagc agtgacgggt cgctcactgc
21501 gccggtggtg gtagatcctg agggcacggg gttgatcacc ggggggaccg
21551 ggacgctggg tgccctgttc gccgagcatc tggtttctgc ccatggtgtc
21601 cggcatctgt tgttgacctc gcggcgcgga cctcaggccc acggtgccac
21651 cgatctgcag cagcggctca ccgatctagg tgctcatgtc accatcacgg
21701 cctgcgatat cagcgacccc gaagcactgg ccgccctggt caattcagtg
21751 cccacacaac accgtttaac cgcggtagtg cacaccgccg cggatttggc
21801 cgacaccgg gtcaccgagt tgaccggcga tcaactcgac caggtgctgg
21851 ccccaaaat cgacgggca tggcagctgc accaactcac ctacgaacac
21901 aacctgtctg cattcatcat gttctcgtcc atggccggaa tgataggcag
21951 tcccggtcag ggtaactacg cggcagccaa caccgcgtta gatgctctcg
22001 ccgactaccg ccaccgcctg ggettgcccg cgaccagcct ggccctggggc
22051 tactggcaga ctacacccgg tctcaccgg catctaaccg atgtagatct
22101 agcccgcatg accgcctgg gtttgatgcc catcgccacc agccacggac
22151 tggccctgtt cgatgccggc ctcgccaccg gacagccggt ttcgataccc
22201 gcccgatca acacccacac cctggcccga cagcccgcg acaacacctt
22251 ggcccgcata ctgtctgcgc tgatcaccac accacggcgc cgggcgccct
22301 ctgcccgaac cgatctcgct gccgcctca acggacttag ccccaacag
22351 caacaacaaa cactggccac cctcgtggcc gcggccaccg ccaccgtgct
22401 gggccaccac acccccgaaa gcacagccc agccaccggc ttcaaagacc
22451 tcggaatcga ttcgctgacc gcccttgaac tgcgaacac cctcaccac
22501 aacaccggcc tggatctgcc cccaccctc atcttcgatc accccacacc
22551 caccgcgcta acccaacacc tgcacaccgg actcaccacc ggtgccctgg
22601 tgccggctcc ggtggtgatc gcagctggtc gtaccgagga gccggtggcg

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FIGURE 6(continued)

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22 651 gtggtgggga tggcgtgtcg tttccccggt ggtgtcgcat cagcggatca
22 701 gttgtgggac ttggtgatcg ctggccgtga tgtggtgggt aattttccgg
22 751 ccgatcgggg ttgggatgtg gagggactgt ttgatcccga tccggacgcg
22 801 gtcggcaaaa cctacacccg ttacggcgcg ttccttgacg atgcggcagg
22 851 ttttgatgcc gggttctttg ggatctctcc acgggaggca cgcgcgatgg
22 901 acccccagca gcggtctgtg ctggagggtg gctgggaagc gctagaaacc
22 951 gcgggtatct ccgcgcacac cttggccggc acctccaccg gggatttcgt
23 001 cggagcctgg gccagtcct acggcgccac caactccgat gacgctgagg
23 051 ggtatgcgat gaccggcggc gcgatcagcg tcatgtccgg ccgtatcgcc
23 101 tacaccttgg gctagaagg tccagcgatc accgttgaca ccgcctgctc
23 151 gtcatcgctg gtggcaattc acctggcctg ccaatcctta cgcaacaacg
23 201 aatcccagct agcactggcc ggcggcgctc ccgtgatgag cacacctgcg
23 251 gttttcaccg atttctcccg ccaacgcggc ctggccccag atggacgctg
23 301 caaagccttc gcgctaccg ccgatggcac cggctttggg gaaggcgccg
23 351 cggctctggg ccttgaacgg ctctccgagg cccgcgcgaa caaccacccg
23 401 gtccttgaga tcgtcgctgg atcggcgatc aaccaagacg gcgcattcaa
23 451 cggactgacc gcacccacag gcccgtcaca acaacgcgtc atcaaccaag
23 501 cactagccaa cgccggcctc acccagcacc aggtcgacgc cgtcgaagcc
23 551 cacggcaccg gcaccacact gggtgacccc atcgaagccg gcgcctaca
23 601 cgccacctac ggccaccacc acacgcccga tcaaccgctt tggctgggat
23 651 ccatcaaate caacatcgcc cacacccaag ccgcgcgcgg cgccgcgggt
23 701 gtggtcaaga tgatccaagc catcaccac gccaccttgc ccgccacctt
23 751 gcacgtcgac caaccagcc cccacatcga ctggtccagc ggcacagtcc
23 801 gactcctaac cgagcccatc caatggccca acaccgacca ccccgccacc
23 851 gcggcggtgt cctcattcgg catcagcggc accaagcccc acctcatcct
23 901 ccaacaaccc cccacccccg acaccacaca aacccccaac accacaacag
23 951 gttctgatcc cgcagtgggt tctgatcccg cagtgggtgt actggtgtgg
24 001 ccgttgtcag cgcgttcagc gccgggggta agcgcacaag cggcccgtct
24 051 gtaccagcat ctacgcgcc accccgatct ggatccgato gatgtagccc
24 101 acagcctggc taccacacgc agccaccacc cccaccgcgc caccatcacc
24 151 accagcattg agcaccacag cgaatacaac cagcacaca ccgatgcgct
24 201 ggccgcactg cagccctgg ccaacaacgg cacacacccc ctgctgagca
24 251 gaggcctgct gacccacacg ggccccggca aaacagtgtt cgtgttcccc
24 301 ggacagggca gtcaataccc cggcatgggc gcagatctct accgccaatt
24 351 ccccggttcc gccacgccc tcgacgcgat cgacgcagcg ttacagcctt
24 401 tcaactggatg gtcggtgcta gctgtgttac acgaagaacc cgaggccccg
24 451 tcgttggagc gggtcgatgt ggtccagcct gtgttgttct cgggtgatgg
24 501 gtcgttagcc gcactctggc ggtgggcccg aatcaccccc gatgcagtca
24 551 tcggccaactc ccagggcgag atcgccgcgg cacatgtggc cggagccctg
24 601 accttgcggc aagcagctgc gtagtggtt ttgcgcagcc gtgtcttgac
24 651 cgacctggcc ggtgccggtg ccatggcttc agtgctatcg cccgaggaac
24 701 cactgaccca gctgctggca cgggtgggac gcaagatcac tgtcgccgca
24 751 gttaacggcc ccgctagcgc tgtggtctcc ggcgatacca cagcgatcac
24 801 cgaattgctg attacctgcg aacacgaaaa catcgacgct cgcgctatcc
24 851 cgggtggacta cccctctcat tccccctata tggaacacat ccgccatcag
24 901 ttctctgaag agctacccga gctgacaccg cggccatcaa ccatcgcgat
24 951 gtattccacc gtcgacggcg aacctcacga caccgcctac gacaccacca
25 001 caatgaccgc ggactactgg taccgcaaca tccgtaacac tgtccggttc
25 051 catgacactg tcgctgccct gctcgggcg ggtgagcagg ttttcttggg
25 101 actttcacct caccgggtgt tgacacaagc gatcacgcac accgtcgaac
25 151 aagccggcgg cggcggcgca gcagtgccag ctctacgcaa ggatcgccct
25 201 gatgctgtcg cgttcgctgc agcactcggc cagctgcact gccatggcat
25 251 cagcccatcc tggaaatgttc tttactgcca ggcccgcccc ctacactgc
25 301 ccacctaocg tttccagcat cagcgttact ggctgctgcc caccgctggg
25 351 gatttcagcg gggccaatac ccacgccatg catccgctgc tagacaccgc
25 401 caccgaactg gccgaaaacc gcggatgggt gttcacccgc cggatcagcc

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FIGURE 6(continued)

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25451 cacgcaccca accatggcta aacgaacacg ccgtcgaatc agccgtgctg
25501 ttcccaggga ccggatttgt cgagctagcg ctgcatgtcg ctgaccgtgc
25551 cggatattcc tcgggtcaacg aactgatcgt gcacaccccc ctgctactcg
25601 ctggccacga caccgcggat ctacagatca ccgtcaccga caccgatgac
25651 atggggccggc agtctcttaa catccactcg caccacata tcggccatga
25701 caacaccacc accggcgatg aacaacccga gtgggtcctg catgccagcg
25751 cagtcttgac cgcacaaacc accgaccaca accacctccc cctaacgcct
25801 gtgccgtggc ctccacccgg cacagcccg atcgaggtgg atgacttcta
25851 cgacgacctg gctgcacagg gctacaacta cggcccga cttccaaggtg
25901 tgcaacggat atggcgtagc cagccacac ccgatgtcat ctacgccgaa
25951 gttgaactac ccgaagacac cgacatcgac ggctacggca tccaccccg
26001 cctattcgac gccgctttac acccctact cgccctgacc caaccccca
26051 ccaacgacac cgatgacac aacaccgag acaccggtga ccaggtg
26101 ctgccctacg cctttaccgg catcagtttg cagccaccc acgccaccg
26151 attgcccgtgta cgggtgaccc gtaccggcg cgatgccatc accgtgcaca
26201 ccagtgcacac caccggagcc ccggtggcga tcatcgactc attgatcacc
26251 cgccccctca ccaccgccac agggctctgt ccggcaacca cagcagctgg
26301 cctactacac ctgagctggc caccacacc tgacaccacg accgacaccg
26351 acaccgacac cgatgccctg cggtatcagg tgatcgccga acccactcaa
26401 caactgcccc gctacctgca cgacctacac accagcaccg acctgcacac
26451 cagcaccacc gaagcagacg tggttggtg gccggtaccg gtgcccagca
26501 acgaagagct ccaggcacac caagcatccg acaccgcgg gtcttctcgg
26551 atacacaccc tgacccgcca aacacttacc gtggtgcagg actggctcac
26601 tcaccccgac accaccggca cccgactggt catcgtgacc cgccacggcg
26651 tcagcaccag tgcccacgac ccggtccccg acctagccca cgccgcagt
26701 tggggcctga tccgcagcgc ccaaacgaa caccccggac gcttcacact
26751 gctcgacacc gacgacaaca ccaacagcga caccctcacc accgccctaa
26801 ccctgccaac ccgcgaaaac caactggcca tacgcccgca caccatccac
26851 atcccccgcc tgacccgcac cgctgtcctg acaccaccgg acagcggccc
26901 ctgggcgctt gacaccaccg gcaaggggtga tctggccaac ctgcacctgc
26951 taccgacccg ccacactgcc ctggcctctg gacaaatccg tatcgatgtc
27001 cgggcgcgtg gtttgaattt tcacgacgtg gtcgctcgctg tggggcta
27051 ccccgacgac ggattcggcg gagaagccgc cggggtgatc agcgagatcg
27101 gtcccgacgt ctacggatcc gccgtgggtg atgccgtgac cggcatgacc
27151 gtctctgggt cgtttgcccc cagcactgtc gctgatcacc gcatgggtgat
27201 gacgatcccg gcccggtggt ccttccccca agccgcatcc ataccggtgg
27251 tattcctgac cgctacatc gctttggccg agatctcggg cctaagccga
27301 gggcaacgag tgctgatcca tgccggcact ggcggtgtgg gtatggctgc
27351 gattcaattg gcacaccatt tgggtgccga agtattcgcc accgccagcg
27401 ccgcgaaatg gagcaccctt gaggcactgg gggtagccg cgaccatata
27451 gcttcctcgc gtactctgga cttttccaac gcattcctcg atgccaccaa
27501 cggcgccggg gttgatgtcg tattgaactg cctcagtggg gaattcgtcg
27551 aagcatccct agccctgctg ccccgcggtg gccatttcgt cgaaatcggc
27601 aaaaccgaca tccgtgatac cgaggtcatc gccgaaccc atcccgcggt
27651 cattttaccgc gccctcgatc tgctcagcgt ctcccccgat cacatccagc
27701 gcacactggc ccaactgtcc ccactgtttg ccaccgacac cctaaaaccc
27751 ctaccgacca ctaattacag catctaccaa gccatctcgg ccttacgtga
27801 catgagtcaa gcccgtcaca caggcaagat cgtgctcact ggcgggtgg
27851 tggtagatcc tgagggcacg gtgttgatca ccggggggac cgggacgctg
27901 ggtgccttgt tcgcccagca tctggtttct gccatgggtg tccggcatct
27951 gttgttgacc tcgcccgcgc gacctcaggc ccacgggtgcc accgatctgc
28001 agcagcggct caccgatcta ggtgctcatg tcaccatcac ggctgcgat
28051 atcagcgacc ccgaagcact ggccgcccctg gtcaattcag tgcccacaca
28101 acaccgttta acccggttag tgacaccgc cgggtatttg gccgacaccc
28151 cggtcaccga gttgaccggc gatcaactcg accaggtgct gggcccaaaa
28201 atcgacgcgg catggcagct gcaccaactc acctacgaac acaacctgtc
28251 tgcatcctac atgttctcgt ccatggccgg aatgataggc agtcccggtc

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FIGURE 6(continued)

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28301 agggtaacta cgccgcagcc aacaccgcgt tagatgctct cgccgactac
28351 cgccaccgcc tgggcttgcc cgcgaccagc ctggcctggg gctactggca
28401 gactcacacc ggtctcaccg cgcatctaac cgatgtagat ctagcccgca
28451 tgacccgcct gggtttgatg cccatcgcca ccagccacgg actggccctg
28501 ttcgatgccg ccccgccac cgagacagccc gtttcgatac ccgccccgat
28551 caacacccac accctggccc gacacgcccg cgacaacacc ctggccccga
28601 tcctgtctgc gctgatcacc acaccacggc gccggggcggc ctctgccgca
28651 accgatctcg ctgcccgcct caacggactt agcccccaac agcaacaaca
28701 aacactggcc accctcgtgg ccgcggccac cgccaccgtg ctggggccacc
28751 acacccccga aagcatcagc ccagccaccg cgttcaaaga cctcggaatc
28801 gatctcgctga ccgcccttga actgcgcaac accctcacc ccaacacccg
28851 cctcaacctt tcgtccactc ttatcttcga tcaccccaca ccccatgccc
28901 tggccgagca tctgcttgaa cagatccctg gcacgcgtgc cctgggtgcc
28951 gctccggtgg tgatcgagc tggctgtacc gaggagccgg tggcggtggt
29001 ggggagtggc tgtcgtttcc ccggtggtgt cgcacagcg gatcagttgt
29051 gggacttggg gatcgctggc cgtgatgtgg tgggtaattt tccggccgat
29101 cgggggttgg atgtggagg actgtttgat cccgatccgg acgcggtcgg
29151 caaaacctac acccgttacg gcgcgttcct tgacgatgcg gcaggttttg
29201 atgccggggt ctttgggatc tctccacggg aggcacgcgc gatggacccc
29251 cagcagcggc tgcctgctgga ggtgtgctgg gaagcgctag aaaccgcggg
29301 tatctccgcg cacaccttgg ccggcacctc caccggggta ttcgtcggag
29351 ccggggccca gtccctacgg gccaccaact ccgatgacgc tgaggggtat
29401 gcgatgaccg gcggcgagc tagcgtcatg tccggccgta tcgcctacac
29451 cttgggccta gaaggtccag cgatcacctg tgacaccgcc tgcctgcat
29501 cgctgggtgg aattcacctg gcctgccaat ccttacgcaa caacgaatcc
29551 cagctagcac tggccggcgg cgtcacctg atgagcacac ctgcggtttt
29601 caccgagttc tcccgccaac gcggcctggc cccagatgga cgctgcaaag
29651 ccttcgccgc taccccgcat ggcaccggct ttggtgaagg cgcgcgggtc
29701 ttggtccttg aacggctctc cgaggcccgc cgcaacaacc acccggtcct
29751 tgcgatcgtc gctggatcgg cgatcaacca agacggcgca tccaacggac
29801 tgaccgcacc ccacggcccg tcacaacaac gcgtcatcaa ccaagcacta
29851 gccaacgcgg gcctcaccca cgaccaggtc gacgcgctcg aagcccacgg
29901 caccggcacc acaactgggtg accccatcga agccggcgcc ctacacgcca
29951 cctacggcca ccaccacag cccgatcaac cgctttgggt gggatccatc
30001 aaatccaaca tcggccacac ccaagccgcc gccggcgccg ccggtgtggt
30051 caagatgate caagccatca cccacgccac cttgcccgcc accttgacg
30101 tcgaccaacc cagccccac atcgactggt ccagcgccac agtccgactc
30151 ctaaccgagc ccattccaatg gcccaacacc gaccaccccc gcaccgcggc
30201 ggtgtcctca ttccgcatca gcggcaccaa cgcccacctc atcctccaac
30251 aacccccac ccctaaccac acacaaacc ccgaggactg cagccccgca
30301 caatctccct gcgcaacaat caccgatgca ggcaaggat tatcgtttgt
30351 gccctgggtg atttcagcga agtcggtga ggcgttgtct gcgcaggcga
30401 gccgattggt gacgcgcctt gacgatgatc cagttgtcga tgcaatcgac
30451 ctgggggtgt cattgatagc cactcgatcg atgtttgagc atcgcgagt
30501 agttgtgggt gcggatcgtc accagttgca gcgcgggttg gccgagttgg
30551 cttctggtaa cttgggcgcc gatgtagtgg tgggcggggc ccgcgcagcg
30601 ggcgagactg taatggtgtt tcccggtcag ggatcacagc ggttgggcat
30651 ggcgcgcgag ctttatgaac aattcccgg attcgcggcg gcgtttgatg
30701 acgttggtga tgcgctggac cagtatctgc ggttgccgct acgccaagt
30751 atgtggggtg acgatgaagg cctgctcaat tcaacggagt tcgcccagcc
30801 gtctgtgttt gctgtcgagg tcgcaactgt tgcgttgctg cgcttctggg
30851 gtgtcgttcc ggattacgtg ataggccatt cggtaggaga gctggccgct
30901 gcacaagtgg ctggcgtttt gagcctgcag gacgcggcta aattagtttc
30951 agcgcggggc cgactgatgc agccctgcc cgccgggtga gcgatggtcg
31001 cggtagccgc cagccagcat gaagtcgagc ctttgcgtgt tgaaggggtc

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FIGURE 6(continued)

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31051 gatatcgcg   cgctcaatgc   gccaggggtca   gttgtgatct   ctggtgatca
31101 ggcggcagtc   cgtttgatcg   ctaatcgatt   ggcggatagg   ggctacaggg
31151 cgcacgaact   tgcggtttcg   catgcctttc   attcatcggt   gatggagccg
31201 atgttgagg   agttcgctcg   gctcgcttct   gaaatcggtg   tggagcaacc
31251 gcagattcca   ctgatttcga   acgtgactgg   tcagctggcc   aacgccgact
31301 acgggtcggc   aggttactgg   gtggaccaca   tccgcgctcc   agtccgtttc
31351 gccgatagt   tcgcttcgtt   ggaagccatg   ggggctagct   gcttcattga
31401 agtcggtcca   gccagcgggt   tgggcgcagc   tatcgagcaa   tccttgaat
31451 ctgccgagcc   gaccgtgtca   gtgtcggcac   tgtccaccga   taaacctgaa
31501 tccgtcgccg   tattgcgcgc   tgcagcacga   ctttccacct   ccggcattcc
31551 tgtggattgg   cagtcgggtg   tcgacggccg   cagcaccag   acagttaacc
31601 tgcccaccta   cgccttccag   cggcaacggt   tctggctcga   cgccaaccgt
31651 atcggtaag   gcgatcccgc   cagtcaacca   caggccaga   acgttgaatc
31701 ccgtttttgg   gaggcggctg   agcgggaaga   cgttgatggc   ttggctgatt
31751 ctatagggt   caccgccagt   gccatgcaga   ccgtgctacc   tgcattgtct
31801 tcatggcgtc   gcgcggagcg   cacacagtcc   gagcttgatt   cctggcgcta
31851 tcaggtgaca   tggctgtctt   cccagcaac   gccgagttcg   atcacgctgt
31901 ccggcatttg   gttgctgata   gttccaagcg   aacttgcaaa   gactgacca
31951 gtaattggat   gtgctgcagc   gctcgaagcg   cacggcgct   tagtcacgat
32001 tatcacaatt   ttcgagccgg   acttcaatcg   ctcatgatg   ggcgcttccc
32051 taaaagatat   cggttcacac   atatctggtg   tcatatcggt   cttagggatt
32101 cacgggtcgg   aattctccga   tagcggcgcg   gtcaagacat   taaatcttgt
32151 gcaagcaatg   ggcgatgtcc   acttagacgt   tcctttgtgg   tgcctaacgc
32201 agggcgcggt   atcgatcagc   gccgacgatt   tgatccgatg   ctgctcagca
32251 gccctggtgt   ggggtctggg   gagagtcgtc   gcattagagc   acccgggatc
32301 gtgggggtgg   ttagtagacc   tccccgagtc   acccgacgat   gcagcatggg
32351 agcgttgtg   cgcctctctc   gcgcagccga   cggatgaaga   tcagtttgcg
32401 atcaggccgt   ctgggggttt   cctacggaga   ttgatccacg   ccccggaac
32451 cagcacatcc   aaatcctcga   ccgcgtgggc   tccgaggggg   accgtgttaa
32501 tcacaggcgg   cacaggcgcg   ttaggcgcac   acgtcgcaag   gtggttggcc
32551 cacaaatatg   aatcggtaga   ttgtctctta   accagccgtc   gcgggatggc
32601 agccgatgga   gctacagagc   tagtgatga   cctccgcacg   gctggcgcca
32651 gtgtgacagt   gcacgcctgc   gacgtgacag   accgcacttc   agtcgaggct
32701 gcaatagcag   gtaaatccct   tgatgcggtc   tttcatcttg   caggacgaca
32751 ccagccaact   ctgctaacag   aactcgagga   cgaatccttt   agtgacgaat
32801 tggcgccgaa   ggttcacggt   gcccaagtat   tgagtacat   cacgtctaac
32851 ctcacactat   cagcgtttgt   catgttctcg   tcagtagccg   gaatctgggg
32901 cggcaaaagt   caaggcgcat   atgctgccgc   taacgcattc   ttagattcgc
32951 tcgccgagaa   acggcgcacg   ttgggggttac   cagcaacatc   ggtcgcttgg
33001 ggactgtggg   ctggcgcgcg   catgggagac   cggccatccg   cttcgggact
33051 aaacctatt   ggcttgaaat   cgatgtcagc   agatttagct   gtgcaggcgc
33101 taagcgacgc   cattgacaga   ccgcaagcaa   cattgactgt   tgcgagcgtc
33151 aactgggatc   ggttctaccc   cacattcgct   ttggcgcgac   cgaggccctt
33201 cctacacgaa   atcacagagg   taatggctta   ccgcgagtcg   atgcgctcaa
33251 gctctgcac   gacggcgacg   ctcctgacga   gcaaattagc   cggactaacg
33301 gcgacagaa   agcgtgcagt   cacccggaag   ttggtccttg   atcaagccgc
33351 atccgttctc   gggtaocgct   caactgagag   tctcgatact   catgagtcac
33401 tcaaagacct   cggatttgat   tcgtagaccg   ccttgaact   gcgcgaccac
33451 ctccaaactg   cgaccggcct   caacctttcg   tccactctta   tcttcgatca
33501 cccacacccc   catgcgggtg   ccgagcatct   gcttgaacag   atocctggca
33551 tcggtgccct   ggtgccggct   ccggtggtga   tcgcagctgg   tcgtaccgag
33601 gagccggtgg   cgggtggtgg   gatggcgtgt   cgtttccccg   gtggtgtcgc
33651 atcagcggat   cagttgtggg   acttggtgat   cgctggccgt   gatgtggtgg
33701 gtaattttcc   ggccgatcgg   ggttgggatg   tggagggact   gtttgatccc
33751 gatccggacg   cggtcggcaa   aacctacacc   cgttacggcg   cgttccctga
33801 cgatgcggca   ggttttgatg   ccgggttctt   tgggatctct   ccacgggagg
33851 cacgcgcgat   ggacccccag   cagcggctgc   tgctggagg   gtgctgggaa

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FIGURE 6(continued)

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33901 ggcctagaaa ccgcgggtat tcccgcgcac accttggccg gcacctccac
33951 cgggggtattc gccggagcct gggcccagtc ctacggcgcc accaactccg
34001 atgacgctga ggggtatgcg atgaccggcg gctcgactag cgtcatgtcc
34051 ggccgtatcg cctacacctt gggcctagaa ggtccagcga tcaccgttga
34101 caccgcctgc tcgtcatcgc tgggtggcaat tcacctggcc tgccaatcct
34151 tacgcaacaa cgaatcccag ctagcactgg ccggcgggcg caccgtgatg
34201 agcacacctg cgattttcac cgagttctcc cgccaacgcg gcctggcccc
34251 agatggacgc tgcaaagcct tcgccgctac cgccgatggc accggctttg
34301 gtgaaggcgc cgcggtcttg gtocctgaac ggctctccga ggcccgcgcg
34351 aacaaccacc cggtccttgc gatcgtcgct ggatcggcga tcaaccaaga
34401 cggcgcatcc aacggactga ccgcacccca cggcccgtca caacaacgcg
34451 tcatcaacca agcactagcc aacgcgggcc tcaccacga ccaggtcgac
34501 gccgtcgaag cccacggcac cggcaccaca ctgggtgacc ccacgaagc
34551 cagcgcccta cagccacct acggccacca ccacagccc gatcaaccg
34601 tttggctggg atccatcaaa tccaacatcg gccacacca agccgcccgc
34651 ggcgcccgcg gtgtgtgtaa gatgatccaa gccatcacc acgccacctt
34701 gcccgccacc ttgcacgtcg accaaccag cccccacatc gactggtcca
34751 ggcgcacagt ccgactccta accgagccca tccaatggcc caacaccgac
34801 ccccccgca ccgcggcggt gtccctattc ggcatcagcg gcaccaacgc
34851 ccacctcatc ctccaacaac cccccacccc cgacaccaca caaaccccca
34901 acaccacaac aggttctgat ccgcagtggt gttctgatcc cgcagtgggt
34951 gtactggtgt ggccgttgtc agcgcgttca gcgccgggt taagcgaca
35001 agcgccctga atctaccag atctcagcgc ccacccgat ctggatccga
35051 tcgatgtagc ccacagcctg gctaccacac gcagccacca cccccaccg
35101 gccaccatca ccaccagcat tgagcaccac agcgaaaaca accacgacac
35151 aaccgatgcg ctggccgcac tgacgccct ggccaacaac ggcacacacc
35201 ccctgctgag cagaggcctg ctgacccac agggccccgg caaaacagtg
35251 ttctgttcc ccggacaggg cagtcaatac cccggcatgg gcgcagatct
35301 ctaccgcaa tccccctgt tcgcccacgc cctcgacgca tgcgacgcag
35351 cgttacagcc tttcactgga tggtcggtgc tagctgtgtt acacgacgaa
35401 cccgaggccc cgtcgttggg gcgggtcgat gtggtccagc ctgtgttgtt
35451 ctcggtgatg gtgtcgttag ccgcaactct gcggtggggc ggaatcacc
35501 ccgatgcagt catcgccac tcccaggcg agatcgccgc ggcacatgtg
35551 gccggagccc tgaccttgc cgaagcagct gcggtagtgg ctttgcgag
35601 ccgtgtcttg accgacctgg ccggtgccgg tgccatggct tcagtgtat
35651 cgcccgagga accactgacc cagctgctgg cacggtggga cggcaagatc
35701 actgtcgccg cagttaacgg ccccgctagc gctgtggtct ccggcgatac
35751 cacagcgatc accgaattgc tgattacctg cgaacacgaa aacatcgacg
35801 ctgcgctat cccggtggac taccctctc attcccccta tatggaacac
35851 atccgcatc agttcctoga cagctaccc gagctgacac cgcggccatc
35901 aaccatcgcg atgtattcca ccgtcgacgg cgaacctcac gacaccgcct
35951 acgacaccac cacaatgacc gcggactact ggtaccgcaa catccgtaac
36001 actgtccggt tccatgacac tgtcgctgcc ctgctcgggg cgggtgagca
36051 ggttttctcg gaactttcac ctacccgggt gttgacacaa gcgatcaccg
36101 acaccgtcga acaagccggc ggcggcgggc cagcagtgcc agctctacgc
36151 aaggatcgcc ctgatgctgt ccggttcgct gcagcactcg gccagctgca
36201 ctgccatggc atcagcccac cctggaatgt tctttactgc caggcccgc
36251 cccacacact gccacctac gctttccagc atcagcgtta ctggtgctg
36301 cccaccgtg gtgatttcag cggggccaat acccagcca tgcatccgt
36351 gctagacacc gccaccgaac tggccgaaaa ccgcggatgg gtgttcaccg
36401 gccggatcag cccacgcacc caaccatggc taaacgaaca cgcgctcgaa
36451 tcagccgtgc tgttcccagg caccggattt gtcgagctag cgctgcatgt
36501 cgctgaccgt gccggatatt cctcggtcaa cgaactgatc gtgcacaccc
36551 cccgtctact cgctggccac gacaccgcgg atctacagat caccgtcacc
36601 gacaccgatg acatgggccc gcagtctctt aacatccact cgcaccaca
36651 tatcgcccat gacaacacca ccaccggcga tgaacaaccc gagtgggtcc
36701 tgcattgccg cgcagtcctg accgcacaaa ccaccgacca caaccacctc

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FIGURE 6(continued)

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36751 cccctaacgc ctgtgccgtg gcctccaccc ggcacagccg cgatcgaggt
36801 ggatgacttc tacgacgacc tggctgcaca gggctacaac tacggcccga
36851 cattccaagg tgtgcaacgg atatggcgtg accacgccac acccgatgtc
36901 atcta.cgccg aagttgaact acccgaagac accgacatcg acggctacgg
36951 catccacccc gccctattcg acgccgcttt acacccccta ctgccctga
37001 cccaa.ccccc caccaacgac accgatgaca ccaacaccgc agacaccggg
37051 gacca.ggtgc ggetgcccta cgccctttacc ggcacagtt tgcacgccac
37101 ccacgccacc cgattacggg tacggctgac ccgtaccggc gccgatgcca
37151 tcaccgtgca caccagtgac accaccggag ccccggtggc gatcatcgac
37201 tcatt.gatca cccgccccct caccaccgcc acagggctctg ctccggcaac
37251 cacagcagct ggcctactac acctgagctg gccaccacac cctgacacca
37301 cgacc.gacac cgacaccgac accgatgccc tgcggtatca ggtgatcgcc
37351 gaacc.cactc aacaactgcc ccgtacctg cacgacctac acaccagcac
37401 caccgaagca gacgtggttg tgtggccggt accggtgccc agcaacgaag
37451 agctc.caggg acaccaagca tcgcacaccg cgggtgtcttc tcggatacac
37501 accct.gaccc gccaaacact taccgtggtg caggactggc tcaactaccc
37551 cgaca.ccacc ggcacccgac tggctcatcg gaccgccac ggcgtcagca
37601 ccagt.gccca cgaccgggtc ccgcacctag ccacgccgc agtgtggggc
37651 ctgat.ccgca gcgccccaaa cgaacacccc ggacgcttca cactgctcga
37701 caccgacgac aacaccaaca gcgacacct caccaccgcc ctaacctgc
37751 caacc.cgcga aaaccaactg gccatacgcc gcgacaccat ccacatcccc
37801 cgcc.gaccc gacacagcag tgcgggtgcg ctcaactgcg cgggtggtggt
37851 agatc.cctgag ggcacgggtg tgatcaccgg ggggaccggg acgctgggtg
37901 ccttg.ttcgc cgagcatctg gtttctgccc atggtgtccg gcatctgttg
37951 ttgac.ctcgc ggcgcggacc tcaggcccac ggtgccaccg atctgcagca
38001 gcggc.tcacc gatctaggtg ctcatgtcac catcacggcc tgcgatatca
38051 gcgac.cccga agcactggcc gccctggtca attcagtgcc cacacaacac
38101 cgttt.aaccg cggtagtgca caccgccgcg gtattggccg acaccccggt
38151 caccg.agttg accggcgatc aactcgacca ggtgctggcc cccaaaatcg
38201 acgcg.gcatg gcagctgcac caactcacct acgaacacaa cctgtctgca
38251 ttcac.catgt tctcgtccat ggccgggaatg ataggcagtc ccggtcaggg
38301 taact.acgcg gcagccaaca ccgcgttaga tgctctcgcc gactaccgcc
38351 accgc.ctggg cttgcccgcg accagcctgg cctggggcta ctggcagact
38401 cacac.cggtc tcaccgcgca tctaaccgat gtagatctag ccgcgatgac
38451 cgcct.tgggt ttgatgcca tcgccaccag ccacggactg gccctgttcg
38501 atgcc.gccct cgccaccgga cagcccgttt cgataccgc cccgatcaac
38551 accca.caccc tggcccgaac cgcccgcgac aacaccctgg ccccgatcct
38601 gtctg.cgtg atcaccacac cagggcgccg ggcggcctct gccgcaaccg
38651 atctc.gtgc ccgcctcaac ggacttagcc cccaacagca acaacaaaca
38701 ctggc.caccc tcgtggccgc ggccaccgcc accgtgctgg gccaccacac
38751 ccccg.aaagc atcagcccag ccaccgcgtt caaagacctc ggaatcgatt
38801 cgctg.accgc ccttgaactg cgcaacaccc tcaccacaa caccggcctg
38851 gatct.gcccc ccaccctcat ctctgatcac cccacacccc atgcggtggc
38901 cgagc.atctg cttgaacaga tccctggcat cggtgccctg gtgcgggtc
38951 cgggt.ggtgat cgcagctggt cgtaaccgag agccgggtggc ggtggtggg
39001 atggc.gtgct gtttccccgg tgggtgcgca tcagcggatc agttgtggga
39051 cttgg.tgatc gctggccgtg atgtggtggg taattttccg gccgatcggg
39101 gttgg.gatgt ggagggactg tttgatcccg atccggacgc ggtcggcaaa
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39251 agcgg.ctgct gctggagggt tgctgggaag cgctagaaac cgcgggtatt
39301 ccgcg.caca ccttggccgg cacctccacc ggggtattcg ccggagcctg
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39401 tgacc.ggcgg ctcgactagc gtcatgtccg gccgtatcgc ctacaccttg
39451 ggcct.agaag gtccagcgat caccgttgac accgcctgct cgtcatcgct
39501 ggtgg.caatt cacctggcct gccaatcctt acgcaacaac gaatccagc
39551 tagca.ctggc cggcggcgct accgtgatga gcacacctgc ggttttcacc

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FIGURE 6(continued)

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39601 gagttctccc gccaacgcgg cctggcccca gatggacgct gcaaagcctt
39651 cgccgctacc gccgatggca ccggctttgg tgaaggcgcc gcggctcttg
39701 tccttgaacg gctctccgag gcccgccgca acaaccaccc ggctccttgcg
39751 atcgctcgctg gatcggcgat caaccaagac ggcgcaccca acggactgac
39801 cgcacccccc ggcccgtcac aacaacgcgt catcaacca gcactagcca
39851 acgcccggcct caccacgac caggtcgacg ccgtcgaagc ccacggcacc
39901 ggcaccacac tgggtgaccc catcgaagcc agcgccctac acgccaccta
39951 cggccaccac cacacgccc atcaaccgct ttggctggga tccatcaaat
40001 ccaacatcgg ccacacccaa gccgcgcgcg gcgcgcgcgg tgtggtcaag
40051 atgatccaag ccatacccca cgccaccttg ccgcgcacct tgcacgtcga
40101 ccaacccagc ccccatcctg actggtccag cggcacagtc cgactcctaa
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40201 tcctcattcg gcatcagcgg caccaacgcc cacctcatcc tccaacaacc
40251 ccccaccccc gacaccacac aaacccccaa caccacaaca ggttctgac
40301 ccgcagtggtg ttctgatccc gcagtgggtg tactggtgtg gccgttgtca
40351 gcgcgttcag cgcgggggtt aagcgcacaa gcggcccgtc tgtaccagca
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40451 ctaccacacg cagccaccac ccccacgcg ccaccatcac caccagcatt
40501 gagcaccaca gcgaaaacaa ccacgacaca accgatgcgc tggccgcact
40551 gcacgcccctg gccaaacaacg gcacacaccc cctgctgagc agaggcctgc
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40651 agtcaatacc ccggcatggg cgcagatctc taccgccaat tcccgtgtt
40701 cgcaccgcgc ctcgacgcac gcgacgcagc gttacagcct ttactggat
40751 ggtcgtgctc agctgtgtta acgacgaac ccgaggcccc gtcgttggag
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40851 cgcactctgg cgggtgggccc gaataccccc cgatgcagtc atcgccact
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40951 gaagcagctg ccgtagtgge tttgcgcagc cgtgtcttga ccgacctggc
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41251 gagctacccg agctgacacc gcggccatca accatcgcca tgtattccac
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41601 ctggaatggt ctttactgce aggcccgccc cctcacactg ccacactacg
41651 ctttccagca tcagcgttac tggctgctgc ccaccgctgg tgatttcagc
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41751 ggccgaaaac cgcggatggg tggtcacagg ccggatcagc ccacgcaccc
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41851 accggatttg tcgagctagc gctgcatgtc gctgaccgtg ccggatattc
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42151 cctccacccc gcacagccgc gatcgagggt gatgacttct acgacgacct
42201 ggctgcacag ggctacaact acggcccgac attccaaggt gtgcaacgga
42251 tatggcgtga ccacgccaca cccgatgtca tctacgccga agttgaacta
42301 cccgaagaca ccgacatcga cggctacggc atccaccccc ccctattoga
42351 cgccgcttta caccacctac tcgccctgac ccaaccccc accaacgaca
42401 ccgatgacac caacaccgca gacaccgggt accagggtgc gctgccctac

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FIGURE 6(continued)

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42451 gcctttaccg gcatacagttt gcacgccacc cacgccaccc gattacgggt
42501 acggctgacc cgtaccggcg ccgatgccat caccgtgcac accagtgaca
42551 ccaccggagc cccggtggcg atcatogact cattgatcac ccgccccctc
42601 accaccgcca cagggctctgc tccggcaacc acagcagctg gcctactaca
42651 cctgagctgg ccaccacacc ctgacaccac gaccgacacc gacaccgaca
42701 ccgatgccct gcggtatcag gtgatcgccg aaccactca acaactgccc
42751 cgctacctgc acgacctaca caccagcacc gacctgcaca ccagcaccac
42801 cgaagcagac gtggttgtgt ggccggtacc ggtgcccagc aacgaagagc
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42901 ctgaccgcgc aaacacttac cgtggtgcag gactggctca ctacccccga
42951 caccaccggc acccgactgg tcatcgtgac ccgccacggc gtcagcacca
43001 gtgcccacga cccggtcccc gacctagccc acgccgcagt gtggggcctg
43051 atccgcagcg cccaaaacga acaccccga cgcttcacac tgetcgacac
43101 cgacgacaa accaacagcg acacctcac caccgcccta accctgccaa
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43201 ctgaccgcga ccgctgtcct gacaccaccg gacagcgcc cctgggcct
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43801 cgtactctgg acttttccaa cgcattcctc gatgccacca acggcgccgg
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43951 atccgtgata ccgaggtcat cgccgcaacc catcccggcg tcatttaccg
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44101 actaattaca gcatctacca agccatctcg gccttacgtg acatgagtca
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44601 catgttctcg tccatggccg gaatgatagg cagtcccggg cagggttaact
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44851 gccctcgcca ccggacagcc cgtttcgata cccgcccga tcaacacca
44901 caccctggcc cgacacgccc cgacaacac cctgaaccgg atcctgtctg
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45051 caccctcgtg gccgcggcca ccgccaccgt gctgggcccac cacaccccg
45101 aaagcatcag ccagccacc gcgttcaaag acctcggaat cgattcgctg
45151 accgcccttg aactgcgcaa caccctcacc cacaacaccg gcctggatct
45201 gccccccacc ctcatcttcg atcaccacc acccaccgcg ctaaccaaac
45251 acctgcacac ccgactcacc accggtgccc tgggtgcggc tccggtggtg

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FIGURE 6(continued)

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45301 atcgacagctg gtcgtaccga ggagccggtg gcggtggtgg ggatggcgtg
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 45401 tcgctggccg tgatgtggtg ggtaattttc cggccgatcg gggttgggat
 45451 gtggcgggac tgtttgatcc cgatccggac gcggtcggca aaacctacac
 45501 ccgttacggc gcgttccttg acgatgcggc aggttttgat gccgggttct
 45551 ttgggatctc tccacgggag gcacgcgcga tggacccccca gcagcggctg
 45601 ctgctggagg tgtgctggga agcgctagaa accgcgggta ttcccgcgca
 45651 caccttggcc ggcacctcca ccgggggtatt cgtcggagcc ggggccaggt
 45701 cctacggcgc caccaactcc gatgacgctg aggggtatgc gatgaccggc
 45751 ggcgcgatca gcgtcatgtc cggccgtatc gcctacacct tgggcctaga
 45801 aggtccagcg atcaccgttg acaccgcctg ctcgatcatcg ctggtggcaa
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 46151 acggcccgtc acaacaacgc gtcacaaacc aagcactagc caacgcggc
 46201 ctacccacg accaggtcga cgccgtcgaa gccacggca ccggcaccac
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 46301 accacacgcc cgatcaaccg ctttggtgg gatccatcaa atccaacatc
 46351 ggccacaccc aagccgcgcg cggcgccgcg ggtgtggtca agatgatcca
 46401 agccatcacc cagccacact tgcccgcac cttgcacgtc gaccaacca
 46451 gccccacat cgactggtcc agcggcacag tccgactcct aaccgagccc
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 46551 cggcatcagc ggcaccaacg cccacctcat cctccaacaa cccccaccc
 46601 ccgacaccac acaaaccccc aacccccaaa caggttctga tcccgcagt
 46651 ggttctgatt ccgcagtggg ttctgatccc gcagtgggtg tactggtgtg
 46701 gccgttgatc gcgcgttcag cgccgggggt aagcgcacaa gcggcccgtc
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 46851 caccagcatt gagcaccaca gcgaaaacaa ccacgacaca accgatgcgc
 46901 tggcgcact gcacgcctg gccaaacacg gcacacaccc cctgctgagc
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 47001 cggacagggc agtcaatacc ccggcatggg cgcagatctc taccgccaat
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 47401 agcgaagcag aagtacaacc gctgcttgaa ggcctagacc acgccgtgtc
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 47501 acagcctcga acaaatcggc gagcacttca ttaccaaga tcgacgtacc
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 48051 tgatttcagc ggggccaaata cccacgccat gcacccgctg ctagacaccg
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FIGURE 6(continued)

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50451 gcaacaacaa acactggcca ccctcgtggc cgcgccacc gccaccgtgc
50501 tgggccaaca caccocgaa agcatcagcc cagccaccgc gttcaaagac
50551 ctcggaatcg attcgctgac cgcccttgaa ctgcgcaaca ccctcaccca
50601 caacaccggc ctggatctgc ccccaacct catcttcgat caccocacac
50651 ccaccgcgct aacccaacac ctgcacaccc gactcacaca aattgagagc
50701 ccaaattccg aagactcgat gctgaacctt aaaaatttgg accgaattga
50751 atcatatatc ttcagaaatt cgggagaaga tcgagctcac gtaatcgcta
50801 atcgtttacg gtcaattctc tcgaaatggg atggcaccgc tagtccagaa
50851 ttacctgcgg aactccatct tgaatcgga acagacgatg agctgttttc
50901 cctagcaaac atgttttcga ctccaaccag cgaaatttca cctactctag
50951 aaggcgggcg tgggtgcaac tga

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FIGURE 6(continued)

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MlsA2 gene

```

1      gtggtgtcaa ctgaagaaaa cctacgcgtt tacttaaaac aggtcatcac
51     agacctccac caaatgcagg cacgtctgcg gaagatcgaa aagcagagat
101    cagagcgggt ggcggtggtg gggatggcgt gtcgtttccc cgggtggtgtc
151    gcatcagcgg atcagttgtg ggacttgggt atcgctggcc gtgatgtggt
201    gggtaatttt ccggccgatc ggggttggga tgtggaggga ctggttgatc
251    ccgatccgga cgcggtcggc aaaacctaca cccgttacgg cgcgttcctt
301    gacgatgcgg caggttttga tgccgggttc tttgggatct ctccacggga
351    ggcacgcgcg atggaccccc agcagcggct gctgctggag gtgtgctggg
401    aagcgctaga aaccgcgggt attcccgcgc acaccttggc cggcacctcc
451    accggggtat tcgtcggagc ctgggcccag tcctacggcg ccaccaactc
501    cgatggcgct gaggggtatg cgatgaccgg cggctcgact agcgtcatgt
551    ccggccgtat cgcctacacc ttgggcctag aaggctcagc gatcaccgtt
601    gacaccgcct gctcgtcatc gctggtggca attcacctgg cctgccaatc
651    cttacgcaac aacgaatccc agctagcact ggccggcggc gtcaccgtga
701    tgagcacacc tgcggttttc accgagttct cccgccaacg cggcctggcc
751    ccagatggag gctgcaaagc cttcgccgct accgccgatg gcaccggctg
801    cggtagaagg gcccggtctt tggtccttga acggctctcc gaggcccgcc
851    gcaacaacca cccggtcctt gcgatcgtcg ctggatcggc gatcaaccaa
901    gacggcgcat ccaaaggact gaccgcaccc cagggccgt cacaacaacg
951    cgtcatcaac caagcactag ccaacgcggc cctcaccac gaccaggtcg
1001   acgccgtcga agccacggc accggcacca cactgggtga cccatcgaa
1051   gccagcgccc tacacgccac ctacggccac caccacacgc ccgatcaacc
1101   gctttggctg ggatccatca aatccaacat cggccacacc caagccgccg
1151   ccggcgccgc cgggtgtggtc aagatgatcc aagccatcac ccacgccacc
1201   ttgcccgcga ccttgacgt cgaccaaccc agccccaca tcgactggtc
1251   cagcggcaca gtccgactcc taaccgagcc catccaatgg cccaacaccg
1301   accacccccg caccgcggcg gtgtcctcat tcggcatcag cggcaccaac
1351   gccacctca tcctccaaca accccccacc cccgacacca caaaaacccc
1401   caacaccaca acaggttctg atcccgcagt gggttctgat tccgcagtgg
1451   gttctgatcc cgcagtgggt gtactggtgt ggccgttgtc agcgcgttca
1501   gcgcgggggt taagcgacac agcggcccggt ctgtaccagc atctcagcgc
1551   ccaccccgat ctggatccga tcgatgtagc ccacagcctg gctaccacac
1601   gcagccacca cccccaccgc gccaccatca ccaccagcat tgagcaccac
1651   agcgaaaaaa accacgacac aaccgatgcg ctggccgcac tgcacgccct
1701   ggccaacaac ggacacacacc ccctgctgag cagaggcctg ctgacccac
1751   agggccccgg caaaacagtg ttctgtgttc ccggacaggg cagtcaatac
1801   cccggcatgg gcgcagatct ctaccgcaa ttccccgtgt tcgcccacgc
1851   cctcgacgag gtgcgtgcgg cgtgaaccc gcattctgat gttgcgttgc
1901   ttgaggtgat gttcagccaa caagacactg ccatggcgca actgctggac
1951   cagaccttct atgcacaacc ggcgttgttc gcgctgggaa ccgctctaca
2001   tcgattgttc acccacgccg gtatccaccc ggactacctg ctaggccact
2051   ccacgggaga actcaccgcg gcatacgccg ccggtgtgct gtcactgcaa
2101   gacgcagcca ccttggtcac aagccgagga cgactgatgc aatcctgcac
2151   gcccggcggg acgatgctcg cactacaagc cagcgaagca gaagtacaac
2201   cgtgcttga aggcctagac caccgcgtgt ccatcgccgc gatcaacgga
2251   gcaacgtcga tcgtactgtc aggagatcac gacagcctcg aacaaatcgg
2301   cgagcacttc attacccaag atcgacgtac cacccgactg caggtcagtc
2351   acgctttcca ctctccacat atggacccca tcctcgaaca attccgccag
2401   atcgcgggccc aactcacctt cagcgcaccc accctgccc a tctgtccaa
2451   cctcaccggg cagatcgccc gccacgacca actcgctca cctgactatt
2501   ggacccaaga gctacgtaac actgtccggt tccatgacac tgtcgctgcc
2551   ctgctcgggg cgggtgagca ggttttctgt gaactttcac ctcacccggt
2601   gttgacacaa gcgatcaccg acaccgtcga acaagccggc ggcggcggcg
2651   cagcagtgcc agctctacgc aaggatcgcc ctgatgctgt cgcgttcgct

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FIGURE 7

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2701 gcagcactcg gccagctgca ctgccatggc atcagcccat cctggaatgt
 2751 tctttactgc caggcccgcc ccctcacact gccacactac gctttccagc
 2801 atcagcgta ctggctgctg cccaccgctg gtgatttcag cggggccaat
 2851 acccagcca tgcattccgt gctagacacc gccaccgaac tggccgaaaa
 2901 ccgcggtatg gtgttcaccg gccggatcag cccacgcacc caaccatggc
 2951 taaacgaaca cgccgtcgaa tcagccgtgc tgttcccagg caccggattt
 3001 gtcgagctag cgctgcatgt cgctgaccgt gccggatatt cctcggtcaa
 3051 cgaactgatc gtgcacaccc ccctgctact cgctggccac gacaccgcgg
 3101 atctacagat caccgtcacc gacaccgatg acatgggccc gcagtctctt
 3151 aacatccact cgcacccaca tatcgcccat gacaacacca ccaccggcga
 3201 tgaacaaccc gagtggttcc tgcattgccag cgcagtcctg accgcacaaa
 3251 ccaccgacca caaccacctc cccctaaccg ctgtggcctg gcctccaccc
 3301 ggcacagccg cgatcgaggt ggatgacttc tacgacgacc tggctgcaca
 3351 gggctacaac tacggcccga cattccaagg tgtgcaacgg atatggcgtg
 3401 accacgccac acccgatgtc atctacgccg aagttgaact acccgaagac
 3451 accagcatcg acggctacgg catccacccc gccctattcg acgcccgttt
 3501 acacccccta ctgcacctga cccaaccccc caccaacgac accgatgaca
 3551 ccaacaccgc agacaccggt gaccaggtgc ggctgcccta cgcttttacc
 3601 ggcatcagtt tgcacgccac ccacgccacc cgattgcggg tacggctgac
 3651 ccgtaccggc gccgatgcca tcaccgtgca caccagtgc accaccggag
 3701 ccccggtggc gatcatcgac tcattgatca cccgccccct caccaccgcc
 3751 acagggctct ctccggcaac cacagcagct ggccctactac acctgagctg
 3801 gccaccacac cctgacacca cgaccgacac cgacaccgac accgatgcc
 3851 tgcgggtatca ggtgatcgcc gaacccactc aacaactgcc ccgctacctg
 3901 cagcacctac acaccagcac cgacctgcac accagcacca ccgaagcaga
 3951 cgtgggtgtg tggccggtag cgggtgcccag caacgaagag ctccaggcac
 4001 accaagcatc cgacaccgcg gtgtcttctc ggatacacac cctgaccgcg
 4051 caaacactta ccgtgggtga ggactggctc actcaccctg acaccaccgg
 4101 caccgcactg gtcattcgta ccgcgccagg cgtcagcacc agtgcccacg
 4151 acccggtccc cgacctagcc cagccgcgag tgtggggcct gatccgcagc
 4201 gcccaaaacg aacaccccgg acgcttcaca ctgctcgaca ccgacgacaa
 4251 caccaacagc gacaccctca ccaccgccc aaccctgcca acccgcgaaa
 4301 accaactggc catagccgcg gacaccatcc acatcccccg cctgaccgcg
 4351 accgctgtcc tgacaccacc ggacagcgcc ccctggcgcc ttgacaccac
 4401 cggcaagggg gatctggcca acctcgccct gctaccgacc gccacactg
 4451 ccctggcctc tggacaaatc cgtatcgatg tccggggcgc tggtttgaat
 4501 tttcacgacg tggctcgctc gttggggcta atccccgacg acggattcgg
 4551 cggagaagcc gccgggggtg tcagcgagat cggccccgac gtctacggat
 4601 tcgccgtggg tgatgccgtg accggcatga ccgtctctgg tgcgtttgcc
 4651 cccagcactg tcgctgatca ccgcattgtg atgacgatec cggcccgggtg
 4701 gtccttcccc caagccgcat ccataccggt ggtattcctg accgcctaca
 4751 tcgctttggc cgagatctcg ggcctaagcc gagggcaacg agtgctgac
 4801 catgccggca ctggcggtgt ggggtatggc cgcattcaat tggcacacca
 4851 tttgggtgcc gaagtattcg ccaccgccag cgccgcgaaa tggagcacc
 4901 ttgaggcact gggggtaccg cgcgaccata tcgcttctc gcgtactctg
 4951 gacttttcca acgcattcct cgatgccacc aacggcgccg gtgttgatgt
 5001 cgtattgaac tgcctcagtg gtgaattcgt cgaagcatcc ctagccctgc
 5051 tgccccgcgg tggccatttc gtcgaaatcg gcaaaaccga catccgtgat
 5101 accgaggtca tcgcccgaac ccattcccggc gtcatttacc gcgcctcga
 5151 tctgtcagc gtctcccccg atcacatcca gcgcacactg gcccactgt
 5201 cccactgtt tgccaccgac accctaaaac ccctaccgac cactaattac
 5251 agcatctacc aagccatctc ggcccttacgt gacatgagtc aagcccgtca
 5301 cacaggcaag atcgtgctca ctgcgccggt ggtggtagat cctgagggca
 5351 cgggtgtgat caccgggggg accgggacgc tgggtgcctt gttcgccgag
 5401 catctgggtt ctgcccattg tgtccggcat ctgttggtga cctcgccggc
 5451 cggacctcag gccacgggtg ccaccgatct gcagcagcgg ctcaccgatc
 5501 taggtgctca tgtcaccatc acggcctgcg atatcagcga cccgaagca

FIGURE 7(continued)

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5551 ctggccgccc tgggtcaattc agtgcccaca caacaccgtt taaccgcggt
5601 agtgcacacc gccgcggtat tggccgacac cccggtcacc gagttgaccg
5651 gcgatcaact cgaccagggtg ctggccccc aatcgacgc ggcattggcag
5701 ctgcaccaac tcacctacga acacaacctg tctgcattca tcatgttctc
5751 gtccatggcc ggaatgatag gcagtcccgg tcagggtaac tacgcggcag
5801 ccaacaccgc gttagatgct ctgcgcgact accgcacccg cctgggcttg
5851 cccgcgacca gcctggcctg gggctactgg cagaccgcga ccggtgtcac
5901 cgcgcattcta accgatgtag atctagcccg catgaccgcg ctgggtttga
5951 tgcccatcgc caccagccac ggactggccc tgttcgatgc cgccctcgcc
6001 accggacagc ccgtttcgat acccgccccg atcaacaccc acaccctggc
6051 ccgacacgcc cgcgacaaca ccctgacccc gatcctgtct gcgctgatca
6101 ccacaccacg gcgcggggcg gcctctgccg caaccgatct cgctgccgcg
6151 ctcaacggac ttagccccc aacagcaaaa caaacactgg ccaccctcgt
6201 ggccgcggcc accgccaccg tgctgggcca ccacacccc gaaagcatca
6251 gcccagccac cgcgttcaaa gacctcgga tgcattcgct gaccgccctt
6301 gaactgcgca acaccctcac ccacaacacc ggccctggatc tgcccccac
6351 cctcatcttc gatcacccca caccctatgc gctaacccaa cacctgcaca
6401 cccgactcac ccaaagccat accccggctc gaccaattgc gtccctgcta
6451 agccacgcga tcgatgaggg caaattccgt gccggcgctg acctattgat
6501 ggccgcatcc aatttgaacc aaagtctcag caatatggct gaactcaacc
6551 agtcccggc cgtgacggac atagctgacg cgtctcctga tgggctactc
6601 accctgatct gcattctctac ctgagagaat gactacgctc gcctcgctgc
6651 tgcgaacatt cattcactga ccttcgctga aattgcggcg cccggctttt
6701 acgacgcgca gctgccaaat tcgatagaga cgtcggcaga ggcgctggca
6751 actgccatca caggcgccca cgcaaatatc tccattgttc tggtagcgca
6801 ctccattgtc tgcgagctag ctgaggcaac gatgacacgt ctacaagacg
6851 ctgacatcga tcttgtgggt ctggttctgt tggatccact cgaagggact
6901 aacagcactg aagattatgt ggagacagtc ttgactcgaa tcgagcatat
6951 caatgcaccg aggtcggag tagacgggta ccttgccgcc ctgggcccgt
7001 atctccaatt ccacgaagac cgccgaatac caataccgga aacgcggcac
7051 atgacactgc actcggacac gaaaattgac cgtgcccata caccaatgaa
7101 cttattacaa gatgaggcag cgttgaccgc cctcaaaata ggaaactgga
7151 tgaacgacac agggagtatc gcagtaacac tgagagatgg acccgatttc
7201 ttgggcaggg cccgctctgt caacatgagg tga

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FIGURE 7(continued)

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MlsB gene

```

1      gtgatcttcg gagatgctca caaaaactgc aggggaggtc ggggtgttggg
51     tgatgcagtc gcagtggctc gaatgtcttg ccgggttcct ggcgcatctg
101    atccggacgc tctgtgggcg ctgctgcgag acgggatcag tgtggctcgat
151    gagatacctt ctgcacgttg gaatttagac ggctctgttg ctcaccgact
201    gaccgatgag caacgatcag cgcttcggca tggcgccctt cttgatgacg
251    tcgaagggtt tgacgccgcg ttcttcggaa ttaacccttc cgaagctggg
301    tcgatggatc cgcagcaacg attgatgctt gaactgacct gggcagcact
351    cgaagatgct cgaatcgtgc cagaacatct ttccggtagc agtagcgggg
401    tgttttaccgg cgcctatgag gatgattaca cgaccgcggt gacctaccgc
451    gcagcgatga ctgcacatac ctttgcgggg actcaccgca gcctcatagc
501    caaccgtgtc tcctacacac tcggtctacg cggacctagt ttggtcatcg
551    ataccgggca atcgtcctca ctggtggctg tgcaagtggc aatggaaagc
601    ttgcgagag aagaaacttc acttgctatc gcgggtggtt ttcaccttaa
651    cctcagcctc gccgcccac tgagcgagc acactttgga gccctttcac
701    ctgacggacg ctgctacacc ttcgacgcac gtgccaaacg atacgttcgt
751    ggcgaaggcg gggcgctcgt cgtcctcaaa cgtctcaacg acgccctagc
801    cgacggcaac cataattact gtgtgatccg cggcagctca gtcaacaacg
851    acggcgccac tcaagacttg acagcgcccg gagtgcagcg ccagcgctca
901    gcgctccttc aagcttatga gcgagccgaa atcgaccctt cagaagtcca
951    atacgtcgag ctacatggca ccggcaccog actcggcgat cccaccgaag
1001   cccactcgct tcaactccgtc ttccggcacat ccacggtccc gcgcagcccg
1051   ctgctagtctg ggtcaatcaa aaccaatata ggtaacctcg aaggcgccgc
1101   aggaatacctc ggcctaatac agactgcctt tgccgttcac catcgccagc
1151   ttccccccag cctcaactac acggttccta acccaaaaat cccgctagag
1201   cagctagggc tccgcgtcca aaccactctc agtgaatggc cggacttaga
1251   caaacgccta acggcgggcg tgtcatcttt ttccatgggt ggcaccaacg
1301   cccacctcat cctccaacaa cccccaccc cgcacaccac acaaaccccc
1351   accccacaa caggtttctga tcccgcagtg ggttctgatc ccgcagtggg
1401   tgtactgggtg tggccggttg cagcgcggtt agcgccgggg ttaagcgcac
1451   aagcgccccg tctgtaccag catctcagcg cccaccccga tctggatccg
1501   atcgatgtag cccacagcct ggctaccaca cgcagccacc acccccaccg
1551   cgccaccatc accaccagca ttgagcacca cagcgaaaac aaccacgaca
1601   caaccgatgc gctggccgca ctgcacgccc tggccaacaa cggcacacac
1651   cccctgctga gcagaggcct gctgacccca cagggccccc gcaaaacagt
1701   gttcgtgttc cccggacagg gcagtcaata ccccggcagt ggcgcagatc
1751   tctaccgcca attccccgtg ttcccccacg cctcgcagca ggtcgctgcg
1801   gcgctgaacc cgcattctga tgttgcggtg cttgaggtga tgttcagcca
1851   acaagacact gccatggcgc aactgctgga ccagaccttc tatgcacaac
1901   cggcggtgtt cgcgctggga accgctctac atcgattgtt caccacgcgc
1951   ggtatccacc cggactacct gctaggccac tccatcggag aactcaccgc
2001   ggcatacgcc gccggtgtgc tgtcactgca agacgcagcc accttgggtca
2051   caagccgagg acgactgatg caatcctgca cgcccgcgcg gacgatgtct
2101   gcactacaag ccagcgaagc agaagtacaa ccgctgcttg aaggcctaga
2151   ccacgccgtg tccatcgccg cgatcaacgg agcaacgtcg atcgactgt
2201   caggagatca cgacagcctc gaacaaatcg gcgagcactt cattacccaa
2251   gatcgacgta ccacccgact gcaggtcagt cacgcttttc actctccaca
2301   tatggacccc atcctcgaac aattccgcca gatcgcgggc caactcacct
2351   tcagcgacac caccctgccc atcttgtcca acctaccgg gcagatcgcc
2401   cgccacgacc aactcgctc acctgactat tggacccaac agctacgtaa
2451   cactgtccgg ttccatgaca ctgtcgctgc cctgctcggg gcgggtgagc
2501   aggttttctt ggaaactttca cctcaccggg tgttgacaca agcgatcacc
2551   gacaccgtcg aacaagccgg cggcgcgggc gcagcagtgc cagctctacg
2601   caaggatcgc cctgatgctg tcgcggttcg tcgagcactc ggccagctgc
2651   actgcatatg catcagccca tcctggaatg ttctttactg ccaggcccg
2701   cccctcacac tgcccaccta cgctttccag catcagcgtt actggctgct
2751   gccccaccgt ggtgatttca gcggggccaa taccacgcgc atgcatccgc

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FIGURE 8

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2801 tgctagacac cgccaccgaa ctggccgaaa accgcggatg ggtgttcacc
2851 ggccggatca gccacgcac ccaaccatgg ctaaacgaac acgccgtcga
2901 atcagccgtg ctgttcccga acaccggatt tgtcgagcta gcgctgcatg
2951 tcgctgaccg tgccggatat tcctcgggtca acgaactgat cgtgcacacc
3001 cccctgctgc tcgctggcca cgacacgcgc gatctacaga tcaccgtcac
3051 cgacaccgat gacatgggcc ggagtcctct taacatccac tcgcacccac
3101 atatcggccca tgacaacacc accaccggcg atgaacaacc cgagtgggtc
3151 ctgcatgccca gcgcagtcct gaccgcacaa accaccgacc acaaccacct
3201 cccctaacg cctgtgccgt ggctccacc cggcacagcc gcgatcgagg
3251 tggatgactt ctacgacgac ctggctgcac agggctacaa ctacggcccg
3301 acattccaag gtgtgcaacg gatatggcgt gaccacgcca caccgatgt
3351 catctacgcc gaagttgaac taccgaaga caccgacatc gacggctacg
3401 gcatccaccc cgccctatcc gacgcgctt tacaccccct actcgccctg
3451 acccaacccc ccaccaacga accgatgac accaacaccg cagacaccgg
3501 ggaccagggt cggtgccct acgcctttac cggcatcagt ttgcacgcca
3551 cccacgccac ccgattgagg gtacggctga cccgtaccgg cgccgatgcc
3601 atcaccgtgc acaccagtga caccacgga gcccgggtgg cgatcatcga
3651 ctcatgtatc acccgcccc tcaccaccgc cacagggtct gctccggcaa
3701 ccacagcagc tggcctacta cactgagct ggccaccaca ccctgacacc
3751 acgaccgaca ccgacaccca caccgatgcc ctgcggtatc aggtgatcgc
3801 cgaacccact caacaactgc ccgctacct gcacgaccta cacaccagca
3851 ccgacctgca caccagcacc accgaagcag acgtggttgt gtggccggtg
3901 ccggtgcccc gcaacgaaga gctccaggca caccaagcat ccgacaccgc
3951 ggtgtcttct cgtatacaca ccctgacct ccaaacactt accgtggtgc
4001 aggactggct cactcaccac gacaccaccg gcaaccgact ggtcatcgtg
4051 accgcccacg gcgtcagcac cagtgccac gaccgggtcc ccgacctagc
4101 ccacgccgca gtgtggggcc tgatccgcag cgcacaaac gaacaccccg
4151 gacgcttcac actgctcgac accgacgaca acaccaacag cgacaccctc
4201 accaccgccc taaccctgcc aaccgcgaa aaccaactgg ccatacgccg
4251 cgacaccatc cacatccccc gcctgacctg acacagcagt gacgggtgcg
4301 tcaactgcgc ggtggtggtg gatcctgagg gcacgggtgt gatcaccggg
4351 gggaccggga cgctgggtgc ctgttcgcc gagcatctgg tttctgcca
4401 tgggtgccgg catctgttgt tgacctcgcg gcgcggacct caggcccacg
4451 gtgccacoga tctgcagcag cggctcacgg atctaggtgc tcatgtcacc
4501 atcaggcctc gcgatatcag cgaccacgaa gcaactggcc ccctggtcaa
4551 ttcaagtccc acacaacacc gttaaccgc ggtagtgcac accgccgcgg
4601 tattggccga cccccggtc accgagttga ccggcgatca actcgaccag
4651 gtgctggccc ccaaaatcga cgcgcgatgg cagctgcacc aactcaccta
4701 cgaacacaa ctgtctgcat tcatcatgtt ctgctccatg gccggaatga
4751 taggcagtcc cggtcagggt aactacgcgg cagccaacac cgcgttagat
4801 gctctcgcc actaccgcca ccgctgggc ttgccgcga ccagcctggc
4851 ctggggctac tggcagactc aaccgggtct caccgcgcat ctaaccgatg
4901 tagatctagc ccgcatgacc cgcctgggtt tgatgccccat cgccaccagc
4951 cagggaactg ccctgttcga tgccgcctc gccaccggac agcccgtttc
5001 gataccgccc ccgatcaaca cccacacct ggcccacac gccgcgaca
5051 acacctggc ccgatcctg tctgcgctga tcaccacacc acggcgccgg
5101 gcggcctctg ccgcaaccga tctcgtgcc cgcctcaacg gacttagccc
5151 ccaacagcaa caacaaacac tggccacct cgtggccgcg gccaccgcca
5201 ccgtgctgg ccaccacacc cccgaagca tcagcccagc caccgcgttc
5251 aaagacctcg gaatcgattc gctga ccgc cttgaactgc gcaacacctt
5301 caccacaaac accggcctca accttcgtc cactcttatc ttcgatcacc
5351 ccacacccca tgcggtggcc gagcatctgc ttgaacagat ccctggcatc
5401 ggtgccctgg tgccggctcc ggtggtgatc gcagctggtc gtaccgagga
5451 gccggtggcg gtggtgggga tggcgtgtcg tttccccggg ggtgtcgcat
5501 cagcggatca gttgtgggac ttggtgatcg ctggccgtga tgtggtgggt
5551 aattttccgg ccgatcgggg ttgggatgtg gagggactgt ttgatccga
5601 tccggacgcg gtcggcaaaa cctacacctg ttacggcgcg ttccttgacg

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FIGURE 8(continued)

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5651 atgcggcagg tttt gatgcc gggttctttg ggatctctcc acgggaggca
5701 cgcgcgatgg acccccagca gcggctgctg ctggagggtg gctgggaagc
5751 gctagaaacc gcgggtattc ccgcgcacac cttggccggc acctccaccg
5801 gggatttcgt cggagcctgg gccagtcct acggcgccac caactccgat
5851 gacgctgagg ggtatgcgat gaccggcggc gcgactagcg tcatgtccgg
5901 ccgtatcgcc tacaccttgg gcctagaagg tccagcgatc accgttgaca
5951 ccgcctgctc gtcctgctg gtggcaattc acctggcctg ccaatcctta
6001 cgcaacaacg aatcccagct agcactggcc ggccggcgta ccgtgatgag
6051 cacacctgcg gttttcaccc agttctcccg ccaacgcggc ctggccccag
6101 atggacgctg caaagccttc gccgctaccg ccgatggcac cggctggggg
6151 gaaggcgccg cggctcttgg ccttgaacgg ctctccgagg ccgcgccgaa
6201 caaccacccg gtccttgcca tcgtcgctgg atcggcgatc aaccaagacg
6251 gcgcatacaa cggactgacc gcaccccacg gcccgtcaca acaacgcgtc
6301 atcaaccaag cactagccaa cgcgggcctc acccagacc aggtcgacgc
6351 cgtcgaagcc cacggcaccc gcaaccacact gggtgacccc atcgaagcca
6401 gcgccttaca cgccacctac ggcaccacc acacgcccga tcaaccgctt
6451 tggctgggat ccatcaaata caacatcggc cacaccgaag ccgcgccggg
6501 cgccgcgggt gtggtcaaga tgatccaagc catcaccac gccaccttgc
6551 ccgccacctt gcacgtcgac caacccagcc ccacatcga ctggtccagc
6601 ggcacagtcc gactcctaac cgagcccatc caatggccca acaccgacca
6651 ccccgccacc gcggcggtgt cctcattcgg catcagcggc accaacgccc
6701 acctcatcct ccaacaaccc cccacccta acccacaca aacccccgag
6751 gactgacccc ccgcacaatc tccctgcgca acaatcaccg atgcaggcac
6801 gggattatcg tttgtgccct gggtgatttc agcgaagtcg gctgaggcgt
6851 tgtctgcgca ggcgagccga ttgttgacgc gccttgacga tgatccagtt
6901 gtcgatgcaa tcgacctggg gtggtcattg atagccactc gatcgatgtt
6951 tgagcatcgc gcagtagttg tgggtgcgga tcgtcaccag ttgcagcgcg
7001 ggttgccgga gttggcttct ggttaacttg gcgccgatgt agtggggg
7051 cgggcccgcg cagcgggcca gactgtaatg gtgtttcccg gtcagggatc
7101 acagcggttg ggcattggcg cgcagcttta tgaacaattc ccggtattcg
7151 cggcgcgctt tgatgacgtt gttgatgcgc tggaccagta tctgcggtt
7201 ccgctacgcc aagttatgtg gggtgacgat gaaggcctgc tcaattcaac
7251 ggagttcgcc cagccgtcgt tgtttgctgt cgaggtcgca ctgtttgcgt
7301 tgcctgcgtt ctggggtgtc gttccggatt acgtgatagg ccattcggt
7351 ggagagctgg ccgctgcaca agtggctggc gttttgagcc tgcaggacgc
7401 ggctaaatta gtttcagcgc ggggccgact gatgcaggcc ctgcccgcg
7451 gtggagcgat ggtcgcggtg gccgccagcc agcatgaagt cgagcctttg
7501 ctgggtgaag gggctgatat cgcggcgctc aatgcgccag ggtcagttgt
7551 gatctctggt gatcaggcgg cagtcggttt gatcgctaat cgattggcgg
7601 ataggggcta cagggcgcac gaacttgccg tttcgcatgc ctttcattca
7651 tcgttgatgg agccgatgtt ggaggagttc gctcggctcg cttctgaaat
7701 cgttggtggg caaccgcaga ttccactgat ttggaacgtg actggtcagc
7751 tggccaacgc cgactacggg tcggcagggt actgggtgga ccacatccgc
7801 cgtccagtcg gtttcgcca tagtgctcgt tcgttggaag ccatgggggc
7851 tagctgcttc attgaagtcg gtcacagccag cgggttgggc gcagctatcg
7901 agcaatcctt gaaatctgcc gagccgaccg tgtcagtgtc ggcactgtcc
7951 accgataaac ctgaatccgt cgcggtattg cgcgctgcag cacgactttc
8001 cacctccggc attcctgtgg attggcagtc ggtgttcgac ggccgcagca
8051 cccagacagt taacctgccc acctacgctc tccagcgcca acggttctgg
8101 ctcgacgcca accgtatcgg tcaaggcgat cccgccagtc aaccacaggc
8151 ccagaacgtt gaatcccgtt tttgggaggc ggtcgagcgg gaagacgttg
8201 atggcttggc tgattctata ggtgtcaccg ccagtgccat gcagaccgtg
8251 ctacctgcat tgtcttcatt gcgtcgcgcg gagcgcacac agtccgagct
8301 tgattcctgg cgtatcagg tgacatggct gtcttcccca gcaacgccga
8351 gttcgatcac gctgtccggc atttggttgc tgatagtcc aagcgaactt
8401 gcaaagactg acccagtaat tggatgtgct gcagcgctcg aagcgcacgg
8451 cgccttagtc acgattatca caattttcga gccggacttc aatcgctcat

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FIGURE 8(continued)

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8501  tgatgggagc  ttccctaaaa  gatatacggtt  cacacatatc  tgggtgcata
8551  tcgttcttag  ggattcacgg  gtccgaattc  tccgatagcg  gcgcgggtcaa
8601  gacattaaat  cttgtgcaag  caatgggcga  tgtccactta  gacgttcctt
8651  tgtgggtgcct  aacgcagggc  gcggtatcga  tcagcgccga  cgatttgatc
8701  cgatgctcgt  cagcagccct  ggtgtggggt  ctggggagag  tcgtcgcatt
8751  agagcaccgg  ggatcgtggg  gtggcttagt  agacctcccc  gagtaccccg
8801  acgatgcagc  atgggagcgc  ttgtgcgccc  tcctcgcgca  gccgacggat
8851  gaagatcagt  ttgcgatcag  gccgtctggg  gttttcctac  ggagattgat
8901  ccacgccccg  gcaaccacga  catccaaatc  ctcgaccgcg  tgggctccga
8951  gggggaccgt  gttaatcaca  ggcggcacag  gcgcgttagg  cgcacacgtc
9001  gcaagggtgg  tggcccacaa  atatgaatcg  gtagatttgc  tcttaaccag
9051  ccgtcgcggg  atggcagccg  atggagctac  agagctagtg  gatgacctcc
9101  gcacggctgg  cgccagtgtg  acagtgcacg  cctgcgacgt  gacagaccgc
9151  acttcagtcg  aggtgcaat  agcaggtaaa  tcccttgatg  cggctcttca
9201  tcttgacaga  cgacaccagc  caactctgct  aacagaactc  gaggacgaat
9251  ccttttagtga  cgaattggcg  ccgaagggtc  acggtgcccc  agtattgagt
9301  gacatcacgt  ctaacctcac  actatcagcg  tttgtcatgt  tctcgtcagt
9351  agccggaatc  tggggcgcca  aaagtcaagg  cgcataatgt  gccgctaacc
9401  cattcttaga  ttcgctcgcc  gagaaacggc  gcacgttggg  gttaccagca
9451  acatcggtcg  cttggggact  gtgggctggc  ggccgcatgg  gagaccggcc
9501  atccgcttcg  ggactaaacc  ttattggctt  gaaatcgatg  tcagcagatt
9551  tagctgtgca  ggcgctaagc  gacgccattg  acagaccgca  agcaacattg
9601  actgttgcca  gcgtcaactg  ggtatcggtt  taccacacat  tcgctttggc
9651  gcgaccgagg  cccttcctac  acgaaatcac  agaggtaatg  gcttaccgcg
9701  agtcgatgcg  ctcaagctct  gcatcgacgg  cgacgctcct  gacgagcaaa
9751  ttagccggac  taacggcgac  agaacagcgt  gcagtcaccc  ggaagtgggt
9801  ccttgatcaa  gccgcatccg  ttctcgggta  cgcctcaact  gagagtctcg
9851  atactcatga  gtcattcaaa  gacctcggat  ttgattoctg  gaccgccctt
9901  gaactgcgcg  accacctcca  aactgcgacc  ggccctcaacc  tttcgtccac
9951  tcttatcttc  gatcacccca  caccctatgc  ggtggccgag  catctgcttg
10001  aacagatccc  tggcatcggt  gccctggtgc  cggctccggg  ggtgatcgca
10051  gctggtcgta  ccgaggagcc  ggtggcggtg  gtggggatgg  cgtgtcgttt
10101  ccccggtggg  gtcgcatcag  cggatcagtt  gtgggacttg  gtgatcgctg
10151  gccgtgatgt  ggtgggtaat  ttcccgcccg  atcgggggtt  ggatgtggag
10201  ggactgtttg  atcccgatcc  ggacgcggtc  ggcaaacctt  acaccggtta
10251  cggcgcggtt  cttgacgatg  cggcagggtt  tgatgccggg  ttctttggga
10301  tctctccacg  ggaggcacgc  gcgatggacc  cccagcagcg  gctgctgctg
10351  gaggtgtgct  gggaagcgct  agaaaccgcg  ggtattcccg  cgcacacctt
10401  ggccggcacc  tccaccgggg  tattcgtcgg  agcctgggcc  cagtccctac
10451  gcgccacca  ctccgatgac  gctgaggggt  atgcgatgac  cggcggcgcg
10501  actagcgtea  tgcccgccg  tatcgccctac  accttggggc  tagaagggtc
10551  agcgatcacc  gttgacaccg  cctgctcgtc  atcgtggtg  gcaattcacc
10601  tggcctgcca  atccttacgc  aacaacgaat  cccagctagc  actggccggc
10651  ggcgtcaccg  tgatgagcac  acctgcgggt  ttcaccgagt  tctcccgcca
10701  acgcggcctg  gcccagatg  gacgctgcaa  agccttcgcc  gctaccgccc
10751  atggcaccgg  ctggggtgaa  ggcgcgcggg  tcttggtcct  tgaacggctc
10801  tccgaggccc  gccgaacaa  ccaccgggtc  cttgcgatcg  tcgctggatc
10851  ggcgatcaac  caagacggcg  catccaacgg  actgaccgca  cccacggcc
10901  cgtcacaaca  acggtcctc  aaccaagcac  tagccaacgc  cggcctcacc
10951  cagcaccagg  tcgacggcgt  cgaagccac  ggcaccggca  ccacactggg
11001  tgaccccatc  gaagccagcg  ccctacacgc  cacctacggc  caccaccaca
11051  cggccgatca  accgctttgg  ctgggatcca  tcaaatacaa  catcggccac
11101  acccaagccg  ccgcggcgcg  cgccgggtgt  gtcaagatga  tccaagccat
11151  caccacgccc  accttgcccc  ccaccttgca  cgtcgaccaa  cccagccccc
11201  acatcgactg  gtccagcggc  acagtccgac  tcctaaccga  gcccatccaa
11251  tggcccaaca  ccgaccaccc  ccgcaccgcg  gcggtgtcct  cattcggcac
11301  cagcggcacc  aacgcccacc  tcactctcca  acaaccccc  acccctaacc

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FIGURE 8(continued)

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11351 ccacacaaac ccccgaggac tgcagccccg cacaatctcc ctgcgcaaca
11401 atcaccgatg caggcacggg attatcgttt gtgccctggg tgatttcagc
11451 gaagtoggct gaggcggtgt ctgcgaggc gagccgattg ttgacgcgcc
11501 ttgacgatga tccagttgtc gatgcaatcg acctggggtg gtcattgata
11551 gccactcgat cgatgtttga gcatcgcgca gtagttgtgg gtgcggatcg
11601 tcaccagttg cagcgcgggt tggccgagtt ggcttctggg aacttgggcg
11651 ccgatgtagt ggtgggccgg gcccgcgag cgggcgagac tgtaatggtg
11701 tttcccggtc agggatcaca gcggttgggc atgggcgcgc agctttatga
11751 acaattcccg gtattcgcg cggcgtttga tgacgttgtt gatgcgctgg
11801 accagtatct gcggttgccg ctacgccaag ttatgtgggg tgacgatgaa
11851 ggctgctca attcaacgga gttcgcccag ccgtcgttgt ttgctgtcga
11901 ggtcgactg tttgcgttgc tgcgcttctg ggggtgctgt ccggattacg
11951 tgataggcca ttcggtagga gagctggccg ctgcacaagt ggctggcgtt
12001 ttgagcgtgc aggacgcggc taaattagtt tcagcgcggg gccactgat
12051 gcaggccctg cccgcgggtg gagcgatggt cgcggtagcc gccagccagc
12101 atgaagtoga gcctttgctg gttgaagggg tcgatatcgc ggcgctcaat
12151 gcgccagggt cagttgtgat ctctggtgat caggcggcag tccgtttgat
12201 cgctaatacg ttggcggata ggggctacag ggcgacgaa cttgcggttt
12251 cgcatgcctt tcattcatcg ttgatggagc cgatgttggg ggagttcgct
12301 cggtcgctt ctgaaatcgt tgtggagcaa ccgcagattc cactgatttc
12351 gaacgtgact ggtcagctgg ccaacgccga ctacgggtcg gcaggttact
12401 ggggtgacca catccgccgt ccagtcggtt tcgccgatag tgcgcttcg
12451 ttggaagcca tgggggctag ctgcttcatt gaagtcggtc cagccagcgg
12501 gttgggcgca gctatcgagc aatccttgaa atctgccgag ccgaccgtgt
12551 cagtgtcggc actgtccacc gataaacctg aatccgtcgc cgtattgcgc
12601 gctgcagcac gactttccac ctccggcatt cctgtggatt ggcagtcggt
12651 gttcgacggc cgcagcacc agacagttaa cctgccacc tacgccttcc
12701 agcggcaacg gttctggctc gacgccaacc gtatcggtca aggcgatccc
12751 gccagtcaac cacaggccca gaacgttgaa tcccgtttt gggaggcggg
12801 cgagcgggaa gacgttgatg gcttggctga ttctataggt gtcaccgcca
12851 gtgccatgca gaccgtgcta cctgcattgt cttcatggcg tcgcgcggag
12901 cgcacacagt ccgagcttga ttcttgccgc tatcagggtg catggctgtc
12951 ttccccagca acgccgagtt cgatcacgct gtccggcatt tggttgctga
13001 tagttccaag cgaacttgca aagactgacc cagtaattgg atgtgctgca
13051 gcgctcgaag cgcacggcgc cttagtcacg attatcaca ttttcgagcc
13101 ggacttcaat cgctcattga tgggcgcttc cctaaaagat atcggttcac
13151 acatatctgg tgtcatatcg ttcttaggga ttacgggtc cgaattctcc
13201 gatagcggcg cggtcaagac attaaatctt gtgcaagcaa tgggcgatgt
13251 ccacttagac gttcctttgt ggtgcctaac gcagggcgcg gtatcgatca
13301 ggcggagcga tttgatccga tgctcgtcag cagccctggt gtggggctctg
13351 gggagagtcg tcgcattaga gcacccggga tcgtggggtg gcttagtaga
13401 cctccccgag tcacccgacg atgcagcatg ggagcgcttg tgcgccctcc
13451 tcgcgcagcc gacggatgaa gatcagttt cgatcaggcc gtctggggtt
13501 ttctacgga gattgatcca cgccccggca accacgacat ccaaaccctc
13551 gaccgcgtgg gctccgaggg ggaccgtgtt aatcacaggc ggcacaggcg
13601 cgtaggcgc acacgtcgca aggtggttgg ccacaaata tgaatcggtg
13651 gatttgctct taaccagccg tcgcgggatg gcagccgatg gagctacaga
13701 gctagtggat gacctccgca cggctggcgc cagtgtgaca gtgcacgcct
13751 gcgagtgac agaccgcact tcagtcgagg ctgcaatagc aggtaaatcc
13801 cttgatgcgg tctttcatct tgcaggacga caccagccaa ctctgctaac
13851 agaactcgag gacgaatcct ttagtgacga attggcgccg aaggttcacg
13901 gtgcccaggt attgagtgac atcacgtcta acctcacact atcagcgttt
13951 gtcattgtct cgtcagtagc cggaatctgg ggcggcaaaa gtcaaggcgc
14001 atatgctgcc gctaacgcat tcttagattc gctcgccgag aaacggcgca
14051 cgttgggggt accagcaaca tcggtcgctt ggggactgtg ggctggcggc
14101 ggcaggggag accggccatc cgcttcggga ctaaacctta ttggcttgaa
14151 atcgatgtca gcagatttag ctgtgcaggc gctaagcgac gccattgaca

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FIGURE 8(continued)

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14201 gaccgcaagc aacattgact gttgcgagcg tcaactggga tcggttctac
14251 cccacattcg ctttggcgcg accgaggccc ttcttacacg aaatcacaga
14301 ggtaatggct taccgcgagt cgatgcgctc gagctctgca tcgacggcga
14351 cgctcctgac gagcaaatta gccggactaa cggcgacaga acagcgtgca
14401 gtcacccgga agttggctct tgatcaagcc gcatccgttc tcgggtacgc
14451 ctcaactgag agtctcgata ctcatgagtc attcaaagac ctcggatttg
14501 attcgctgac cgcccttgaa ctgcgcgacc acctccaaac tgcgaccggc
14551 ctcaaccttt cgtccactct tatcttcgat caccacacac cccatgcggt
14601 ggccgagcat ctgcttgaac agatccctgg catcggtgcc ctggtgccgg
14651 ctccggtggg gatcgcagct ggtcgtaccg aggagccggt ggcggtgggtg
14701 gggatggcgt gtcgtttccc cgggtggtgtc gcatcagcgg atcagttgtg
14751 ggacttgggt atcgctggcc gtgatgtggt gggtaatttt ccggccgatac
14801 ggggttggga tgtggaggga ctggttgatc ccgatccgga cgcggtcggc
14851 aaaacctaca cccgttacgg cgcgttcctt gacgatgcgg caggttttga
14901 tgccgggttc tttgggatct ctccacggga ggcacgcgcg atggaccccc
14951 agcagcggct gctgctggag gtgtgctggg aagcgctaga aacgcgggtg
15001 attcccgcgc acaccttggc cggcacctcc accggggtat tcgtcggagc
15051 ctgggccag tcctacggcg ccaccaactc cgatgacgct gagggtatg
15101 cgatgaccgg cggcgcgata agcgtcatgt ccggccgtat cgcctacacc
15151 ttgggcctag aaggctccagc gatcaccgtt gacaccgcct gctcgtcatc
15201 gctggtggca attcacctgg cctgccaatc cttacgcaac aacgaatccc
15251 agctagcact gaccggcggc gtcaccgtga tgagcacacc tgcgattttc
15301 accgagttct cccgccaaag cggcctggcc ccagatggac gctgcaaagc
15351 cttcgcgct accgcgatg gcaccggctg ggtggaaggc gccgcggtct
15401 tggctcctga acggctctcc gaggcccgcc gcaacaacca cccggtcctt
15451 gcgatcgtcg ctggatcggc gatcaaccaa gacggcgcac ccaacggact
15501 gaccgcaccc cacggcccgt cacaacaacg cgtcatcaac caagcactag
15551 ccaacgccgg cctcaccac gaccaggtcg acgccgtcga agcccacggc
15601 accggcacca cactgggtga ccccatcgaa gccagcgcgc tacacgccac
15651 ctacggccac caccacacgc ccgatcaacc gctttggctg ggatccatca
15701 aatccaacat cggccacacc caagccgcgc cggcgcgcgc cgggtgtggtc
15751 aagatgatcc aagccatcac ccacgccacc ttgcccgcca ccttgcacgt
15801 cgaccaaccc agccccaca ctgactggtc cagcggcaca gtccgactcc
15851 taaccgagcc catccaatgg cccaacaccg accacccccg caccgcggcg
15901 gtgtcctcat tcggcatcag cggcaccaac gccacacctc tcctccaaca
15951 accccccacc cccgacacca cacaacccc caacaaccaca acaggttctg
16001 atcccgagct ggggttctgat cccgcagtggt gtgtactggt gtggccgttg
16051 tcagcgcggt cagcgcgcgg gttaagcgca caagcggccc gtctgtacca
16101 gcatctcagc gccacccccg atctggatcc gatcgatgta gccacagcc
16151 tggtaccac acgcagccac cacccccacc gcgccaccat caccaccagc
16201 attgagcacc acagcgaaaa caaccacgac acaaccgatg cgtggccgc
16251 actgcacgcc ctggccaaca acggcacaca cccctgctg agcagaggcc
16301 tgotgacccc acagggcccc ggcaaaacag tgttcgtgtt ccccgacag
16351 ggcagtcaat accccggcat gggcgcagat ctctaccgcc aattccccgt
16401 gttogccac gccctcgacg catgcgacgc agcgttacag cctttcactg
16451 gatggtcggt gctagctgtg ttacacgacg aacccgaggc ccgctcgttg
16501 gagcgagtcg atgtggtcca gcctgtgttg ttctcggtga tgggtgcgtt
16551 agccgcactc tggcggtggg ccggaatcac ccccgatgca gtcacggcc
16601 actccaggcg cgagatcgcc gcggcacatg tggccggagc cctgaccttg
16651 cccgaagcag ctgcggtagt ggctttgcgc agcgtgtct tgaccgacct
16701 ggccggtgcc ggtgccatgg cttcagtgct atgcgccgag gaaccactga
16751 cccagctgct ggcacggtgg gacggcaaga tcaactgtcg cgcagttaac
16801 ggccccgcta gcgctgtggt ctccggcgat accacagcga tcaccgaatt
16851 gctgattacc tgcgaacacg aaaacatcga cgtcgcgcgt atcccggtgg
16901 actacccctc tcattccccc tataatggaac acatccgcca tcagttcctc
16951 gacgagctac ccgagctgac accgcggcca tcaaccatcg cgatgtattc
17001 caccgtcgac ggcgaacctc acgacaccgc ctacgacacc accacaatga

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FIGURE 8(continued)

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17051 cccgaggacta ctggtaccgc aacatccgta acactgtccg gttccatgac
17101 actgtcgcgtg ccctgctcgg ggccgggtgag cagggttttcc tggaaactttc
17151 acctcaccog gtgttgacac aagcgatcac cgacaacgtc gaacaagccg
17201 gccgaggcgg cgcagcagtg ccagctctac gcaaggatcg ccctgatgct
17251 gtcgcgtttcg ctgcagcact cggccagctg cactgccatg gcatcagccc
17301 atcctggaat gttctttact gccaggcccg ccccttcaca ctgcccacct
17351 acgctttcca gcatcagcgt tactggctgc tgcccaccgc tgggtgatttc
17401 agcggggcca ataccacgc catgcatccg ctgctagaca ccgccaccga
17451 actggccgaa aaccgcggat ggggtgttcac cggccggatc agcccacgca
17501 cccaaccatg gctaaacgaa cagcccgctc aatcagccgt gctgttccca
17551 ggcaccggat ttgtcgagct agcgtgcat gtcgctgacc gtgccggata
17601 ttctcgggtg aacgaactga tcgtgcacac cccctgctg ctgctggcc
17651 acgacaccgc ggtactacag atcaccgtca ccgacaccga tgacatgggc
17701 cggcagctct ttaacatcca ctgcgcccc catatcggcc atgacaacac
17751 caccaccggc gatgaacaac ccgagtgggt cctgcatgcc agcgcagtcc
17801 tgaccgcaca aaccaccgac cacaaccacc tccccctaac gcctgtgccg
17851 tggcctccac ccggcacagc cgcgatcgag gtggatgact tctacgacga
17901 cctggctgca cagggttaca actacggccc gacattccaa ggtgtgcaac
17951 ggatatggcg tgaccacgcc acaccgatg tcatctacgc cgaagttaa
18001 ctaccggaag acaccgacat cgacggctac ggcattccacc ccgccctatt
18051 cgacgcgctg ttacaccccc tactgcctt gacccaaccc cccaccaacg
18101 acaccgatga caccaacacc gcagacaccg gtgaccaggt gcggctgcc
18151 tacgccttta ccggcatcag ttgacgcgc acccaccgca cccgattacg
18201 ggtacggctg acccgtaccg gcgcgatgc catcacgctg cacaccagt
18251 acaccaccgg agccccgggt gcgatcatcg actcattgat caccgcccc
18301 ctaccaccgg ccacagggtc tgctccggca accacagcag ctggcctact
18351 acacctgagc tggccaccac accctgacac cacgaccgac accgacaccg
18401 acaccgatgc cctgcggtat cagggtgatcg ccgaacccac tcaacaactg
18451 ccccgctacc tgacgacct acacaccagc accgacctgc acaccagcac
18501 caccgaagca gacgtggttg tgtggccggt accggtgcc agcaacgaag
18551 agctccaggc acaccaagca tccgacaccg cgggtgtctt tcggatacac
18601 accctgaccc gccaaacact taccgtggtg caggactggc tcaactaccc
18651 cgacaccacc ggcacccgac tgggtcatcg gacccgccac ggcgtcagca
18701 ccagtgccca cgaccgggtc ccgacctag cccacgccgc agtgtggggc
18751 ctgatccgca gcgccccaaa cgaacacccc ggacgcttca cactgctcga
18801 caccgacgac aacaccaaca gcgacaccct caccaaccgc ctaaccctgc
18851 caaccgcgca aaaccaactg gccatacgcc gcgacaccat ccacatcccc
18901 cgcctgaccc gacacagcag tgacggtgcg ctactgccc cgggtggtgt
18951 agatcctgag ggcacggtgt tgatcaccgg ggggaccgg acgctgggtg
19001 ccttggttcg cgagcatctg gtttctgccc atggtgtccg gcatctgtt
19051 ttgacctcgc ggcgcggacc tcaggccccc ggtgcaccg atctgcagca
19101 ggcgctcacc gatctaggtg ctcatgtcac catcacggc tgcgatatca
19151 gcgacccgca agcactggcc gccctggtca attcagtgc cacacaacac
19201 cgtttaaccg cggtagtgca caccgcgcg gtattggccg acaccgggt
19251 caccgagttg accggcgatc aactcgacca ggtgctggcc cccaaaatcg
19301 acggggcatg gcagctgcac caactcacct acgaaacaaa cctgtctgca
19351 ttcattcatgt tctcgtccat ggccggaatg ataggcagtc ccggtcaggg
19401 taactacgcg gcagccaaca ccgcttaga tgctctcgcc gactaccgcc
19451 accgcctggg cttgcccgcg accagcctgg cctggggcta ctggcagact
19501 cacaccggtc tcaccgcgca tctaaccgat gtagatctag cccgcatgac
19551 ccgcctgggt ttgatgcca tcgccaccag ccaaggactg gccctgttcg
19601 atgcgcct cgcaccgga cagcccgtt cgataccgc cccgatcaac
19651 acccacaccc tggcccgaca cgcccgcgac aacacccctg cccgatcct
19701 gtctgcgctg atcaccacac cagggcgcc ggccgctct gccgcaaccg
19751 atctcgtcgc ccgcctcaac ggacttagcc cccaaacgca acaacaacaa
19801 ctggccacc tcgtggccgc ggccaccgcc accgtgctgg gccaccacac
19851 ccccgaaagc atcagcccag ccaccgcgtt caaagacctc ggaatcgatt

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FIGURE 8(continued)

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19901	cgctgaccgc	ccttgaactg	cgcaacaccc	tcaccacaaa	caccggcctg
19951	gatctgcccc	ccaccctcat	cttcgatcac	cccacacccc	atgcgggtggc
20001	cgagcatctg	cttgaacaga	tccctggcat	cgggtgccctg	gtgccggctc
20051	cgggtggtgat	cgcagctggg	cgtaccga gg	agccgggtggc	ggtggtgggg
20101	atggcgtgtc	gtttccccgg	tgggtgcgca	tcagcggatc	agttgtggga
20151	cttgggtgatc	gctggccgtg	atgtgggtgg	taattttccg	gccgatcggg
20201	gttggggatgt	ggagggactg	tttgcaccog	atccggacgc	ggtcggcaaa
20251	acctacaccc	gttacggcgc	gttccttgac	gatgcggcag	gttttgatgc
20301	cgggttcttt	gggatctctc	cacgggaggc	acgcgcgatg	gacccccagc
20351	agcggctgct	gctggagggtg	tgctgggaag	cgctagaaac	cgcggttatt
20401	cccgcgcaca	ccttggccgg	cacctccacc	ggggtattcg	ccggagcctg
20451	ggcccagtcg	tacggcgcca	ccaactccga	tgacgctgag	gggtatgcga
20501	tgaccggcgg	ctcgactagc	gtcatgtcog	gccgtatcgc	ctacaccttg
20551	ggcctagaag	gtccagcgat	caccgttgac	accgcctgct	cgtcatcgct
20601	ggtggcaatt	cacctggcct	gccaatcctt	acgcaacaac	gaatcccagc
20651	tagcactggc	cggcgggctc	accgtgatga	gcacacctgc	ggttttcacc
20701	gagttctccc	gccaacgcgg	cctggccccca	gatggacget	gcaaagcctt
20751	cgccgctacc	gccgatggca	ccggctttgg	tgaaggcgcc	gcggtcttgg
20801	tccttgaacg	gctctccgag	gcccgcgcga	acaaccaccc	ggtccttgcg
20851	atcgctcgctg	gatcggcgat	caaccaagac	ggcgcaccca	acggactgac
20901	cgcacccccc	ggcccgtcac	aacaacgcgt	catcaaccaa	gcactagcca
20951	acgccggcct	caccacgac	caggtcgacg	ccgtcgaagc	ccacggcacc
21001	ggcaccacac	tgggtgacct	catcgaagcc	agcgccctac	acgccacctt
21051	cggccaccac	cacacgcccg	atcaaccgct	ttggctggga	tccatcaaatt
21101	ccaacatcgg	ccacacccaa	gccgcgcgcg	gcgccgcggg	tgtggtcaag
21151	atgatccaag	ccatcaccca	cgccaccttg	cccgccacct	tgcacgtcga
21201	ccaacccagc	ccccacatcg	actggtccag	cggcacagtc	cgactcctaa
21251	ccgagcccat	ccaatggccc	aacaccga cc	acccccgcac	cgcgggcgtg
21301	tcctcatctg	gcacagcg	caccaacg cc	cacctcatcc	tccaacaacc
21351	ccccaccccc	gacaccacac	aaacccccaa	ccccacaaca	ggttctgatc
21401	ccgcagtggt	ttctgatccc	gcagtggtg	tactggtgtg	gccgttgtca
21451	gcgcggttcag	cgccggggtt	aagcgacaaa	gcggcccgtc	tgtaccagca
21501	tctcagcgcc	caccccgatc	tggatccgat	cgatgtagcc	cacagcctgg
21551	ctaccacacg	cagccaccac	ccccaccg cg	ccaccatcac	caccagcatt
21601	gagcaccaca	gcgaaaacaa	ccacgacaca	accgatgcgc	tggccgcact
21651	gcacgccctg	gccaacaacg	gcacacaccc	cctgctgagc	agaggcctgc
21701	tgacccccaca	gggccccggc	aaaacagtgt	tcgtgttccc	cggacagggc
21751	agtcaatacc	ccggcatggg	cgcagatctc	taccgccaat	tccccgtgtt
21801	cgccccagcg	ctcgacgagg	ttcgtgcggc	gctgaaccgg	catctcgatg
21851	ttgctgttct	tgaggtgatg	ttagcgaac	aagacactgc	catggcgcaa
21901	ctgctggacc	agaccttcta	tgcacaaccg	gcgttgttccg	cgctgggaac
21951	cgctctacat	cgattgttca	cccacgcccg	tatccacccg	gactacctgc
22001	taggccactc	catcgagaaa	ctcaccgcgg	catacgccgc	cgggtgtgctg
22051	tcactgcaag	acgcagccac	cttggtcaca	agccgaggac	gactgatgca
22101	atcctgcaag	cccggcggga	cgatgctcgc	actacaagcc	agcgaagcag
22151	aagtacaacc	gctgcttgaa	ggcctagacc	acgccgtgtc	catcgccggc
22201	atcaacggag	caacgtcgat	cgtactgtca	ggagatcacg	acagcctcga
22251	acaaatcggc	gagcacttca	ttacccaaga	tcgaogtacc	acccgactgc
22301	aggtcagtc	cgttttccac	tctccacata	tggaccccat	cctcgaacaa
22351	ttccgccaga	tcgcggccca	actcaccttc	agcgcaacca	ccctgcccac
22401	cttgtccaac	ctcaccgggc	agatcgcccg	ccacgaccaa	ctcgccctcac
22451	ctgactattg	gacccaacag	ctacgtaaca	ctgtccgggtt	ccatgacact
22501	gtcgtgccc	tgctcggggc	gggtgagcag	gttttcctgg	aactttcacc
22551	tcacccgggtg	ttgacacaag	cgatcaccca	caccgtcgaa	caagccggcg
22601	gcggcgggcg	agcagtgcc	gctctacgca	aggatcgccc	tgatgctgtc
22651	gcgttcgctg	cagcactcgg	ccagctgcac	tgccatggca	tcagcccatc
22701	ctggaatggt	ctttactgcc	aggccccgcc	cctcacactg	cccacctacg

FIGURE 8(continued)

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22751 ctttccagca tcagcggttac tggetgctgc ccaccgctgg tgatttcagc
22801 ggggccaaata cccacgccat gcatccgctg ctagacaccg ccaccgaact
22851 ggccgaaaac cgcggatggg tgttcaccgg ccggatcagc ccacgcaccc
22901 aaccatggct aaacgaacac gccgtcgaat cagccgtgct gttccagggc
22951 accggatttg tcgagctagc gctgcatgtc gctgaccgtg ccggatattc
23001 ctcggtcaac gaactgatcg tgcacacccc cctgctgctc gctggccacg
23051 acaccgcgga tctacagatc accgtcaccg acaccgatga catggggcgg
23101 cagtctctta acatccactc gcgcccacat atcggccatg acaacaccac
23151 caccggcgat gaacaacccg agtgggtcct gcatgccagc gcagtcctga
23201 ccgcacaaac caccgaccac aaccacctcc ccctaacgcc tgtgccgtgg
23251 cctccacccg gcacagccgc gatcgagggt gatgacttct acgacgacct
23301 ggctgcacag ggctacaact acggcccgcac attccaaggt gtgcaacgga
23351 tatggcgtga ccacgccaca ccgatgtca tctacgccga agttgaacta
23401 cccgaagaca ccgacatcga cggctacggc atccaccccg ccctattcga
23451 cgccgcttta caccctctac tgccttgac ccaacccccc accaagcaca
23501 ccgatgacac caacaccgca gacaccggtg accagggtgcg gctgccctac
23551 gcctttaccg gcatcagttt gcacgccacc cacgccaccc gattgcgggt
23601 acggctgacc cgtaccggcg ccgatgccat caccgtgcac accagtgaca
23651 ccaccggagc ccggtggcg atcatcgact cattgatcac ccgccccctc
23701 accaccgcca cagggtctgc tccggcaacc acagcagctg gcctactaca
23751 cctgagctgg ccaccacacc ctgacaccac gaccgacacc gacaccgaca
23801 ccgatgccct gcggtatcag gtgatcgccg aaccactca acaactgcc
23851 cgctacctgc acgacctaca caccagcacc gacctgcaca ccagcaacc
23901 cgaagcagac gtggttgtgt ggccggtacc ggtgccccagc aacgaagagc
23951 tccaggcaca ccaagcatcc gacaccgcgg tgtcttctcg gatacacacc
24001 ctgacccgcc aaacacttac cgtggtgcag gactggctca ctacccccga
24051 caccaccggc accgactgg tcatcgtgac ccgccacggc gtcagcacca
24101 gtgcccacga ccggtcccc gacctagccc acgccgcagt gtggggcctg
24151 atccgcagcg cccaaaacga acaccccgga cgcttcacac tgctcgacac
24201 cgacgacaac accaacagcg acaccctcac caccgcccta accctgccaa
24251 cccgcgaaaa ccaactggcc atacgcgcg acaccatcca catccccgc
24301 ctgacccgac acagcagtga cgggtgcgctc actgcgcggg tgggtggtaga
24351 tcctgagggc acggtgttga tcaccggggg gaccgggacg ctgggtgcct
24401 tgttcgccga gcatctggtt tctgcccatg gtgtccggca tctgttgttg
24451 acctcgcggc gcggacctca ggcccacggt gccaccgatc tgcagcagcg
24501 gctcaccgat ctaggtgctc atgtcaccat cacggcctgc gatatcagcg
24551 accccgaagc actggccgcc ctggtcaatt cagtgccac acaacaccgt
24601 ttaaccgcgg tagtgcacac cgccgcggta ttggccgaca ccccggtcac
24651 cgagttgacc ggcatcaac tcgaccaggt gctggcccc aaaatcgacg
24701 cggcatggca gctgcaccaa ctacctaag aacacaacct gtctgcattc
24751 atcatgttct cgtccatggc cggaaatgata ggagtcctcg gtcagggtaa
24801 ctacgcggca gccaacaccg cgttagatgc tctcgccgac taccgccacc
24851 gcctgggctt gcccgcgacc agcctggcct ggggctactg gcagactcac
24901 accggtctca ccgcgatct aaccgatgta gatctagccc gcatgaccog
24951 cctgggtttg atgccatcg ccaccagcca cggactggcc ctggtogatg
25001 ccgccctcgc caccggacag ccggtttcga taccggcccc gatcaacacc
25051 cacaccctgg cccgacacgc ccgcgacaac accctggccc cgatcctgtc
25101 tgcgctgac accacaccac ggcccgggc ggctctgcc gcaaccgatc
25151 tcgctgccc cctcaacgga cttagcccc aacagcaaca acaaacactg
25201 gccaccctcg tggccgcggc caccgccacc gtgctgggccc accacacccc
25251 cgaaagcatc agcccagcca ccgcgttcaa agacctcgga atcgattcgc
25301 tgaccgccct tgaactgcgc aacaccctca cccacaacac cggcctggat
25351 ctgcccccca cctcatctt cgatcacccc acaccccatg cgggtggcca
25401 gcatctgctt gaacagatcc ctggcatcgg tgccctgggt ccggtcccg
25451 tgggtgatcg agctggtcgt accgaggagc cgggtggcgg ggtggggatg
25501 gcgtgtcgtt tccccggtgg tgtcgcatca gcggatcagt tgtgggactt

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FIGURE 8(continued)

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25551 ggtgatcgct ggccgtgatg tgggtgggta a ttttccggcc gatcgggggtt
25601 gggatgtgga gggactgttt gatcccgat c cggacgcggt cggcaaaacc
25651 tacaccggtt acggcgcggt ccttgacga t gcggcaggtt ttgatgccgg
25701 gttcttttggg atctctccac gggaggcac g cgcgatggac ccccagcagc
25751 ggctgctgct ggagggtgtg tgggaagcgc tagaaaccgc ggggtattccc
25801 gcgcacacct tggccggcac ctccaccgg gtattcgccg gagcctgggc
25851 ccagtcctac ggccgccacca actccgatga cgctgagggg tatgcatga
25901 ccggcggcgc gactagcgct atgtccggc c gtatcgcta caccttgggc
25951 ctagaaggtc cagcgatcac cgttgacac c gcctgctcgt catcgctggt
26001 ggcaattcac ctggcctgcc aatccttac g caacaacgaa tcccagctag
26051 cactggccgg cggcgtcacc gtgatgagca cacctgcggt tttcaccgag
26101 ttctcccgcc aaocgggcct ggccccaga t ggacgctgca aagccttcgc
26151 cgctaccgcc gatggcaccg gctttggtga aggcgcgcg gtcttggtcc
26201 ttgaacggct ctccgaggcc cgcgcaaca accaccgggt ccttgcgatc
26251 gtcgctggat cggcgatcaa ccaagacgg c gcatccaacg gactgaccgc
26301 accccacggc cgtcaccaac aacgcgtca t caaccaagca ctagccaacg
26351 ccggcctcac ccacgaccag gtcgacgcg t cgaagccca cggcaccggc
26401 accacactgg gtgaccccat cgaagccagc gccctacacg ccacctacgg
26451 ccaccaccac acgcccgatc aaccgcttt g gctgggatcc atcaaatcca
26501 acatcgccca cacccaagcc gccgcggcg c cgccgggtgt ggtcaagatg
26551 atccaagcca taccaccagc caccttgccc gccaccttgc acgtcgacca
26601 acccagcccc cacatcgact ggtccagcgg cacagtccga ctccaaaccg
26651 agccccatca atggcccaac accgaccac c ccgcaccgc ggcggtgtcc
26701 tcattcgcca tcagcggcac caacgcccac ctcatcctcc aacaaccccc
26751 cacccccagc accacacaaa cccccaacac cacaacaggt tctgatcccg
26801 cagtgggttc tgatcccga gtgggtgtac tgggtgtggc gttgtcagcg
26851 cgttcagcgc cggggttaag cgcacaagc g gccgctctgt accagcatct
26901 cagcgcaccac ccgatctgg atccgatcga tgtagccac agcctggcta
26951 ccacacgcag ccaccacccc caccgcgcca ccatcaccac cagcattgag
27001 caccacagcg aaaacaacca cgacacaacc gatgcgctgg ccgactgca
27051 cgccctggcc aacaacggca cacaccccct gctgagcaga ggcctgctga
27101 cccacacggg ccccgcaaa acagtgttcg tgttcccgg acagggcagt
27151 caataccccc gcattggcgc agatctctac cgccaattcc ccgtgttcgc
27201 ccacgcccctc gacgcattgc acgcagcgtt acagccttcc actggatggt
27251 cgggtgctagc tgtgttacac gacgaaccgc agggcccgtc gttggagcgg
27301 gtcatgtgtg tccagcctgt gttgttctc g gtgatgggtg cgttagccgc
27351 actctggcgg tgggcccga tccaccccga tgcagtcac ggccactccc
27401 agggcgagat cggcgcggca catgtggccg gagccctgac cttgcccgaa
27451 gcagctgcgg tagtggttt gcgcagccgt gtcttgaccg acctggccgg
27501 tgccggtgcc atggcttcag tgctatcgcc cgaggaacca ctgaccagc
27551 tgctggcacg gtgggacggc aagatcactg tcgccgagt taacggcccc
27601 gctagcgtg tggctctccg cgataccaca gcatcaccg aattgctgat
27651 tacctgcgaa cagcaaaaca tcgacgctc cgtatcccg gtggactacc
27701 cctctcatte cccctatatg gaacacatcc gccatcagtt cctcgacgag
27751 ctaccocgagc tgacaccgc gccatcaacc atcgcatgt attccaccgt
27801 cgacggcgaa cctcacgaca ccgcctacga caccaccaca atgaccgcgg
27851 actactggta ccgcaacatc cgtaacactg tccggttcca tgacactgtc
27901 gctgccctgc tcggggcggg tgagcaggtt ttccctggaac tttcacctca
27951 cccggtgttg acacaagcga tcaccgacac cgtcgaacaa gccggcggcg
28001 gcggcgacg agtgccagct ctacgcaagg atcgccctga tgcgtgcgcg
28051 ttgcgtgcag cactcgcca gctgcactgc catggcatca gccatcctg
28101 gaatgttctt tactgccagg cccgccccct cacactgccc acctacgctt
28151 tccagcatca gcgttactgg ctgctgccca ccgctggtga tttcagcggg
28201 gccaataccc acgcatgca tccgctgcta gacaccgcca ccgaactggc
28251 cgaaaaccgc ggatgggtgt tcaccggccg gatcagccca cgcaccaaac
28301 catggctaaa cgaacacgcc gtcgaatcag ccgtgctgtt cccaggcacc
28351 ggatttgcg agctagcgct gcatgtcgct gaccgtgccg gatattcctc

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FIGURE 8(continued)

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28401 ggtcaacgaa ctgatcgtgc acacccccct gctactcgtt ggccacgaca
28451 ccgcggatct acagatcacc gtcaccgaca ccgatgacat gggccggcag
28501 tctcttaaca tccactcgca cccacatata ggccatgaca acaccaccac
28551 cggcgatgaa caaccccgag gggtcctgca tgccagcgca gtcctgaccg
28601 cacaaccac cgaccacaac cacctcccc taacgcctgt gccgtggcct
28651 ccacccggca cagccgcgat cgaggtggat gacttctacg acgacctggc
28701 tgcacagggc tacaactacg gcccgacatt ccaaggtgtg caacggatat
28751 ggcgtgacca cgccacaccc gatgtcatct acgccgaagt tgaactacc
28801 gaagacaccg acatcgacgg ctacggcatc caccgccccc tattcgacgc
28851 cgcttttacac cccctactcg ccctgaccca acccccacc aacgacaccg
28901 atgacaccaa caccgcagac accggtgacc aggtgcggct gccctacgcc
28951 tttaccggca tcagtttgca cgccacccac gccaccgat tgcgggtacg
29001 gctgaccgt acggcgccg atgccatcac cgtgcacacc agtgacacca
29051 ccggagcccc ggtggcgatc atcgactcat tgatcaccgg cccctcacc
29101 accgccacag ggtctgctcc ggcaaccaca gcagctggcc tactacacct
29151 gagctggcca ccacaccctg acaccaagac cgacaccgac accgacaccg
29201 atgccctgcg gtatcgggtg atcgccgaac ccactcaaca actgccccgc
29251 tacctgcacg acctacacac cagcaccgac ctgcacacca gcaccaccga
29301 agcagacgtg gttgtgtggc cggtaaccgt gccagcaac gaagagctcc
29351 aggcacacca agcatccgac accgcggtgt cttctcggat acacaccctg
29401 acccgccaaa cacttaccgt ggtgcaggac tggctcactc accccgacac
29451 caccggcacc cgactggta cgtgaccgg ccacggcgct agcaccagt
29501 cccacgaccc ggtccccgac ctgacccacg ccgcagtgtg gggcctgatc
29551 cgcagcgccc aaaacgaaca ccccgacgc ttcacactgc tcgacaccga
29601 cgacaacacc aacagcgaca ccctcaccac cgccctaacc ctgccaaccc
29651 gcgaaaacca actggccata cgcccgacac ccatccacat ccccgccctg
29701 acccgacaca gcagtacggc tgcgctcact gcgccgggtg tggtagatcc
29751 tgagggcacc gtgttgatca ccggggggac cgggacgctg ggtgccttgt
29801 tcgcccagca tctggtttct gcccatggtg tccggcatct gttgttgacc
29851 tcgcccgcgc gacctcaggc ccacgggtgc accgatctgc agcagcggct
29901 caccgatcta ggtgctcatg tcaccatcac ggccctgcgat atcagcgacc
29951 ccgaagcact ggcgcacctg gtcaattcag tgccacaca acaccgttta
30001 acccggttag tgcacaccgc cgcggtattg gccgacaccc cggtcaccga
30051 gttgaccggc gatcaactcg accaggtgct ggccccaaa atcgacggg
30101 catggcagct gcaccaactc acctacgaac acaacctgtc tgcattcatc
30151 atgttctcgt ccatggccgg aatgataggc agtcccggtc agggtaacta
30201 cgccggcagc aacaccgcgt tagatgctct cgccgactac cgccaccgcc
30251 tgggcttgcc cgcgaccagc ctggcctggg gctactggca gactcacacc
30301 ggtctcaccg cgcatctaac cgaatgatag ctagcccgca tgaccgcct
30351 ggggtttgat cccatcgcca ccagccacgg actggccctg ttcgatgcg
30401 ccctcgccac cggacagccc gtttcgatac ccgcccgat caacaccac
30451 accctggccc gacacgcccg cgacaacacc ctggccccga tcctgtctgc
30501 gctgatcacc acaccacggc gcggggcggc ctctgccgca accgatctcg
30551 ctgcccgcct caacggactt agcccccaac agcaacaaca aacactggcc
30601 accctcgtgg ccgcgccac cgccaccgtg ctgggccacc acaccccgga
30651 aagcatcagc ccagccaccg cgttcaaaga cctcggaatc gattcgtga
30701 ccgcccttga actgcgcaac acctcacc acaacaccgg cctggatctg
30751 cccccaccc tcattcttga tcacccaca cccatgcgg tggccgagca
30801 tctgcttgaa cagatccctg gcatcggtgc cctggtgcg gctccggtg
30851 tgatcgagc tggctgtacc gaggagccgg tggcggtggt ggggatggg
30901 tgcgttttcc ccggtggtgt cgcacagcg gatcagttgt gggacttgg
30951 gatcgctggc cgtgatgtgg tgggtaattt tccggccgat cggggttgg
31001 atgtggagg actgtttgat cccgatccgg acgcggtcgg caaaacctac
31051 acccgttacg gcgcgttcct tgacgatgcg gcaggttttg atgccgggtt
31101 ctttgggatc tctccacggg aggcacgcgc gatggacccc cagcagcggc
31151 tgctgctgga ggtgtgctgg gaagcgctag aaaccgcggg tattcccgcg
31201 cacaccttg ccggcacctc caccgggga ttcgccggag cctgggccc

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FIGURE 8(continued)

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31251 gtcctacggc gccaccaact ccgatgacgc tgagggggtat gcgatgaccg
31301 gggcgcgac tagcgatcatg tccggccgta tgcgctacac cttgggccta
31351 gaaggtccag cgatcacctg tgacaccgcc tgctcgatcat cgctgggtggc
31401 aattcacctg gcctgccaat ccttacgcaa caacgaatcc cagctagcac
31451 tggccggcgg cgtcaccgtg atgagcacac ctgcggtttt caccgagttc
31501 tcccgccaac gcggcctggc ccagatgga cgctgcaaag ccttcgccgc
31551 taccgccgat ggcaccggct ttggtgaagg cgccgcggtc ttggtccttg
31601 aacggctctc cgaggcccg cgcacaacc acccggtcct tgcgatcgtc
31651 gctggatcgg cgatcaacca agacggcgca tccaacggac tgaccgcacc
31701 ccacggcccg tcacaacaac gcgtcatcaa ccaagcacta gccaacgccg
31751 gcctcaccca cgaccaggct gacgccgtcg aagcccacgg caccggcacc
31801 aactgggtg acccatcgga agccagcgcc ctacacgcca cctacggcca
31851 ccaccacacg cccgatcaac cgctttggct gggatccatc aaatccaaca
31901 tcggccacac ccaagccgcc gccggcgccg ccggtgtggt caagatgac
31951 caagccatca ccaagccac cttgcccgcc accttgacg togaccaacc
32001 cagccccac atcgactggt ccagcgccac agtccgactc ctaaccgagc
32051 ccatccaatg gcccaacacc gaccacccc gcaccgcggc ggtgtcctca
32101 ttcggcatca gcggcaccaa cgcaccctc atcctccaac aacccccac
32151 ccccgacacc acacaaacc ccaacaccac aacaggttct gatcccgag
32201 tgggttctga tcccgagtg ggtgtactgg tgtggccgtt gtcagcgct
32251 tcagcgccgg ggttaagcgc acaagcggcc cgtctgtacc agcatctcag
32301 cgccaccccc gatctggatc cgatcgatgt agcccacagc ctggctacca
32351 cagcagcca ccacccccac cgcgccacca tcaccaccag cattgagcac
32401 cacagcgaaa acaaccacga cacaaccgat gcgctggccg cactgcacgc
32451 cctggccaac aacggcacac accccctgct gagcagaggc ctgctgaccc
32501 cacagggccc cggcaaaaaca gtgttcgtgt tcccggaca gggcagtcaa
32551 taccocggca tgggcgcaga tctctaccgc caattccccg tgttcgcca
32601 cgccctcgac gcatgcgacg cagcgttaca gcctttcact ggatggtcgg
32651 tgctagctgt gttacacgac gaaccocgag cccgctcggt ggagcgagtc
32701 gatgtggtcc agcctgtgtt gttctcggtg atggtgtcgt tagccgcact
32751 ctggcggtgg gccggaatca ccccgatgc agtcacggc cactcccagg
32801 gcgagatcgc ccgggcacat gtggccggag cctgacctt gccgaagca
32851 gctgcggtag tggctttgcg cagccgtgtc ttgaccgacc tggccggtgc
32901 cggtgccatg gottcagtg tctcggccga ggaaccactg acccagctgc
32951 tggcacggtg ggacggcaag atcactgtcg ccgcagttaa cggccccgct
33001 agcgtgtgtg tctccggcga taccacagcg atcaccgaat tgctgattac
33051 ctgcgaacac gaaaacatcg acgctcgcgc tatcccggtg gactaccct
33101 ctcatccccc ctatatggaa cacatccgcc atcagttcct cgacgagcta
33151 cccgagctga caccgcggcc atcaaccatc gcgatgtatt ccaccgtcga
33201 cggcgaaact cagcacaccg cctacgacac caccacaatg accgcggact
33251 actggtaccg caacatccgt aacactgtcc ggttccatga cactgtcgt
33301 gccctgctcg gggcggtgta gcaggttttc ctggaacttt cacctacccc
33351 ggtgttgaca caagcgatca ccgacaccgt cgaacaagcc ggcggcgggc
33401 ggcagcagtg gccagctcta cgcaaggatc gcctgatgc tgcgcgttc
33451 gctgcagcac tcggccagct gcactgccat ggcacagcc catcctggaa
33501 tgttctttac tgccaggccc gccccctcac actgcccacc tacgctttcc
33551 agcatcagcg ttactggctg ctgcccaccg ctggtgattt cagcggggcc
33601 aatacccacg ccattgcatcc gctgctagac accgcccacc aactggccga
33651 aaaccgcgga tgggtgttca ccggccggat cagcccacgc acccaaccat
33701 ggctaaacga acacgccgtc gaatcagccg tgctgttccc aggcaccgga
33751 ttcgtcgagc tagcgtgca tgtcgtgac cgtgccggat attcctcgg
33801 caacgaactg atcgtgcaca ccccccctgt actcgtggc cagcacaccg
33851 cggatctaca gatcacctgc accgacaccg atgacatggg ccggcagctc
33901 cttaacatcc actcgcgccc acatatcggc catgacaaca ccaccaccg
33951 cgatgaacaa cccgagtggg tcctgcatgc cagcgcagtc ctgaccgcac
34001 aaaccaccga ccacaaccac ctcccctaa cgctgtgcc gtggcctcca
34051 cccggcacag ccgcgatcga ggtggatgac tctacgacg acctggctgc

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FIGURE 8(continued)

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34101 acagggctac aactacggcc cgacattcca aggtgtgcaa cggatatggc
34151 gtgaccaogc cacacccgat gtcattctac cggaagttga actaccggaa
34201 gacaccgaca tcgacggcta cggcatccac ccgcgcctat tcgacgccgc
34251 ttacacccc ctactcgccc tgacccaacc cccaccaaac gacaccgatg
34301 acaccaaacac cgcagacacc ggtgaccagg tgcggctgcc ctacgccttt
34351 accggcatca gtttgacgc caccacgccc acccgattac gggtagggct
34401 gaccgcgtacc ggcgcggatg ccatcaccgt gcacaccagt gacaccaccg
34451 gagccccggg ggcgatcatc gactcattga tcaccgccc cctcaccacc
34501 gcoacagggg ctgctccggc aaccacagca gctggcctac tacacctgag
34551 ctggccacca caccctgaca ccacgaccga caccgacacc gacaccgatg
34601 ccctgcggtg tcaggtgatc gccgaaccca ctcaacaact gccccgctac
34651 ctgcacgacc tacacaccag caccgacctg cacaccagca ccaccgaagc
34701 agacgtgggt gtgtggccgg taccggtgcc cagcaacgaa gagctccagg
34751 cacaccaagc atccgacacc gcgtgtcttt ctcgataca caccctgacc
34801 cgccaaacac ttaccgtggg tcaggactgg ctcaactacc ccgacaccac
34851 cggcaccoga ctggtcatcg tgacccgcca cggcgctcagc accagtggcc
34901 acgaccgggt ccgcgacctg gccacgcgcg cagtgtgggg cctgatccgc
34951 agcgcccaaa acgaacaccc cggacgcttc aactgtctcg acaccgacga
35001 caacaccaac agcgacaccc tcaccaccgc ctaaacctg ccaaccgcg
35051 aaaaccaact ggccatacgc cgcgacacca tccacatccc ccgctgacc
35101 cgacacagca gtgacggtgc gctcactgcg ccggtgggtg tagatcctga
35151 gggcagcgtg ttgatcccg gggggaccgg gacgtgggt gccttgctc
35201 ccgagcatct ggtttctgcc catggtgtcc ggcattctgt gttgacctc
35251 cggcgcgga ctcaggccca cggtgccaac gatctgcagc agcggtcac
35301 cgatctaggt gctcatgtca ccatcacggc ctgcgatata agcgaccccg
35351 aagcactggc cgccctggtc aattcagtgc ccacacaaca ccgtttaacc
35401 gcggtagtgc acaccgcgc ggtattggcc gacaccccg tcaccgagtt
35451 gaccggcgat caactcgacc aggtgctggc cccaaaaatc gacgcggcat
35501 ggcagctgca ccaactcacc tacgaacaca acctgtctgc attcatcatg
35551 ttctcgtcca tggccggaat gataggcagt cccggtcagg gtaactacgc
35601 ggcagccaac acccggttag atgctctcgc cgactacgc caccgcctg
35651 gcttgccgc gaccagcctg gcctgggct actggcagac tcacaccggt
35701 ctacaccgc atctaaccga tgtagatcta gcccgcatga cccgcctgg
35751 tttgatgccc atcgccacca gccacggact ggcctgttc gatgccgcc
35801 tcgccaccgg acagcccggt tcgatacccg ccccgatcaa caccacacc
35851 ctggcccgac acgcccgcga caacaccctg gcccgatcc tgtctgcgt
35901 gatcaccaca ccacggcgcc gggcggcctc tgccgcaacc gatctcgtg
35951 cccgcctcaa cggacttagc ccccaacagc aacaacaaac actggccacc
36001 ctctggccg cggccaccgc caccgtgctg ggccaccaca ccccgaaag
36051 catcagcca gccaccgct tcaaacacct cggaatcgat tcgctgaccg
36101 cccttgaact gcgcaacacc ctacccaca acaccggcct ggatctgccc
36151 cccaccctca tcttcgatca cccacaccc catgcgggtg ccgagcatct
36201 gcttgaacag atccctggca tcggtgccct ggtgccggct ccggtggtga
36251 tcgacgtgg tcgtaccgag gagccggtgg cgggtggtgg gatggcgtgt
36301 cgtttccccg gtggtgtcgc atcagcggat cagttgtggg acttgggtgat
36351 cgctggccgt gatgtggtgg gtaattttcc ggccgatcgg ggttgggatg
36401 tggagggact gtttgatccc gatccggacg cggtcggcaa aacctacacc
36451 cgttacggcg cgttccttga cgatgcggca ggttttgatg ccgggttctt
36501 tgggatctct ccacgggagg cagcgcgat ggacccocag cagcggtgc
36551 tgctggaggt gtgctgggaa gcgctagaaa ccgcggttat tcccgcgac
36601 accttggccg gcacctccac cggggtattc gccggagcct gggccagtc
36651 ctacggcgcc accaactccg atgacgctga ggggtatgcg atgaccggcg
36701 gcgcgactag cgtcatgtcc ggccgtatcg cctacacctt gggcctagaa
36751 ggtccagcga tcaccgttga caccgcctgc tcgtcatcgc tgggtggcaat
36801 tcacctggcc tgccaatcct tacgcaacaa cgaatcccag ctagcactgg

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FIGURE 8(continued)

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36851 ccggcggggt caccgtgatg agcacacctg cggttttcac cgagttctcc
36901 cgccaacgcg gcctggcccc agatggacgc tgcaaagcct tcgccgctac
36951 cgccgatggc accggctttg gtgaaggcgc cgcggtcttg gtccttgaac
37001 ggctctccga ggcccgcgcg aacaaccacc cggtccttgc gatcgtcgct
37051 ggatcggcga tcaaccaaga cggcgcatcc aacggactga ccgcacccca
37101 cggcccggtca caacaacgcg tcatcaacca agcactagcc aacgccggcc
37151 tcacccacga ccaggtcgac gccgtcgaag ccacaggcac cggcaccaca
37201 ctgggtgacc ccatcgaagc cagcgcccta cagccacct acggccacca
37251 ccacacgccc gatcaaccgc tttggctggg atccatcaaa tccaacatcg
37301 gccacaccca agccgcccgc ggcgccgccc gtgtggtcaa gatgatccaa
37351 gccatcacc acgccacctt gcccgccacc ttgcacgtcg accaaccag
37401 cccccacatc gactggtcca gcggcacagt ccgactccta accgagccca
37451 tccaatggcc caacaccgac cacccecga cgcggcgggt gtccctattc
37501 ggcatcagcg gcaccaacgc ccacctcatc ctccaacaac cccccacccc
37551 cgacaccaca caaaccacca acaccacaac aggttctgat ccgcagtggt
37601 gttctgatcc cgcagtggtt gtactggtgt ggccgttgtc agcgcgttca
37651 gcgcccgggt taagcgcaca agcggcccgt ctgtaccagc atctcagcgc
37701 ccaccccgat ctggatccga tcgatgtagc ccacagcctg gctaccacac
37751 gcagccacca cccccaccgc gccaccatca ccaccagcat tgagcaccac
37801 agcgaanaaa accacgacac aaccgatgcg ctggccgcac tgcacgccct
37851 ggccaacaac ggcaacacac ccctgctgag cagaggcctg ctgacccac
37901 agggcccgcg caaaacagtg ttcgtgttcc cggacagggt cagtcaatac
37951 ccgcgcatgg gcgcagatct ctaccgcaa tccccgtgt tcgcccacgc
38001 cctcgacgag gtcgctgcgg cgctgaaccc gcactctgat gttgcgttgc
38051 ttgaggtgat gttcagccaa caagacactg ccattggcga actgctggac
38101 cagaccttct atgcacaacc ggcgttgttc gcgctgggaa ccgctctaca
38151 tcgattgttc acccagcccg gtatccacc ggactaccta ctaggccact
38201 ccacgagaga actcaccgcg gcatacgccg ccggtgtgct gtcactgcaa
38251 gacgcagcca ccttggtcac aagccgagga cgactgatgc aatcctgcac
38301 gcccgcgggg acgatgctcg cactacaagc cagcgaagca gaagtacaac
38351 cgctgcttga aggcctagac cagcccggtg ccacgcccgc gatcaacgga
38401 gcaacgtcga tcgtactgtc aggagatcac gacagcctcg aacaaatcgg
38451 cgagcacttc attacccaag atcgacgtac caccgactg caggtcagtc
38501 acgctttcca ctctccacat atggacccca tcctcgaaca attccgccag
38551 atcgcgcccc aactcacctt cagcgcaccc accctgcca tcttgtccaa
38601 cctcaccggg cagatcgccc gccacgacca actcgcctca cctgactatt
38651 ggacccaaca gctacgtaac actgtccggt tccatgacac tgtcgtgcc
38701 ctgctcgggg cgggtgagca ggttttctct gaactttcac ctacccggt
38751 gttgacacaa gcgatcaccg acaccgtcga acaagccggc ggccggcgcg
38801 cagcagtgcc agctctacgc aaaggatcgc ctgatgctgt cgcgttcgct
38851 cgagcactcg gcagctgca atgccatggc atcagcccat cctggaatgt
38901 tctttactgc caggcccgcc ccctcacact gcccacctac gctttccagc
38951 atcagcggtt ctggctgctg cccaccgctg gtgatttcag cggggccaat
39001 acccagccca tgcattccgt gctagacacc gccaccgaac tggccgaaaa
39051 ccgcgatgg gtgttcaccg gccggatcag cccacgcacc caaccatggc
39101 taaacgaaca cgccgtcgaa tcagccgtgc tgttccagg caccggattt
39151 gtcgagctag cgctgcatgt cgtgaccgt gcgggatatt cctcggtaa
39201 cgaactgatc gtgcacacc ccctgctact cgtggccac gacaccgcg
39251 atctacagat caccgtcacc caccgatg acatgggccc gcagtctctt
39301 aacatccact cgcgcccaca tatcggccat gacaacacca ccaccggcga
39351 tgaacaaccc gagtgggtcc tgcattgccag cgcagtcttg accgcacaaa
39401 ccaccgacca caaccacct cccctaacgc ctgtgccgtg gcctccaccc
39451 ggacacagcg gatcgaggt ggatgacttc taogacgacc tggctgcaca
39501 gggctacaac tacggcccga cattccaagg tgtgcaacgg atatggcgtg
39551 accacgccac acccgatgtc atctacgccc aagttgaact acccgaagac
39601 accgacatcg acggctacgg catccacccc gccctattcg acgcccgttt
39651 acaccccta ctcgcctga cccaaccccc caccaacgac accgatgaca

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FIGURE 8(continued)

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39701 ccaacaccgc agacaccggg gaccaggtgc ggctgcccta cgcctttacc
39751 ggcatacagtt tgcacgccac ccacgccacc cgattacggg tacggctgac
39801 ccgtaccggc gccgatgcc taccgtgca caccagt gac accaccggag
39851 ccccggtggc gatcatcgac tcattgatca cccgcccct caccaccgcc
39901 acagggctctg ctccggcaac cacagcagct ggctactac acctgagctg
39951 gccaccacac cctgacacca cgaccgacac cgacaccgac accgatgccc
40001 tgcggtatca ggtgatcgcc gaacccactc aacaactgcc ccgtacctg
40051 cagcacctac acaccagcac cgacctgcac accagcacca ccgaagcaga
40101 cgtggtttgtg tggcgggtac cggcgccag caacgaagag ctccaggcac
40151 accaagcatc cgacaccgcg gtgtcttctc ggatacacac cctgaccgcg
40201 caaacactta ccgtgggtgca ggactggctc actcaccctg acaccaccgg
40251 caccgcactg gtcacgtgta cccgccacgg cgtcagcacc agtgcccacg
40301 acccggtccc cgacctagcc cagccgcag tgtggggcct gatccgcagc
40351 gcccaaacag aacaccccg acgttcaca ctgctcgaca ccgacgacaa
40401 caccaacagc gacacctca ccaccgccct aacctgccca acccgcgaaa
40451 accaactggc catacgccgc gacaccatcc acatccccc cctgaccgga
40501 cacagcagtg acggtgcgct cactgcgccg gtggtggtag atcctgaggg
40551 caggtgtttg atcaccgggg ggaccgggac gctgggtgcc ttgttcgccg
40601 agcatctggt ttctgcccac ggtgtccggc atctgttgtt gacctcgcg
40651 cgcggaacctc aggcccacgg tgccaccgat ctgcagcagc ggctcaccga
40701 tctaggtgct catgtcacca tcacggcctg cgatatcagc gaccccgaa
40751 cactggccgc cctggtcaat tcagtgccca cacaacaccg tttaaccgcg
40801 gtagtgacaa ccgccgcggt attggccgac accccggtca ccgagttgac
40851 cggcgatcaa ctcgaccagg tctggcccc caaaatcgac gcggcatggc
40901 agctgcacca actcacctac gaacacaacc tgtctgcatt catcatgttc
40951 tcgtccatgg ccggaatgat aggcagtccc ggtcagggtg actacgcggc
41001 agccaacacc gcgttagatg ctctcgccga ctaccgccac cgcctgggct
41051 tgcccgcgac cagcctggcc tggggctact ggcagactca caccggtctc
41101 accgcgcac ctaaccgatgt agatctagcc cgcataccc gcctggggtt
41151 gatgcccac gccaccagcc acggactggc cctgttcgat gccgccctcg
41201 ccaccggaca gcccggttcg ataccgccc cgatcaaac ccacaccctg
41251 gcccgacacg ccgcgacaaa caccctggcc ccgatcctgt ctgcgctgat
41301 caccacacca cggcgccggg cggcctctgc cgcaaccgat ctgctgccc
41351 gcctcaacgg acttagcccc caacagcaac aacaaact ggccaccctc
41401 gtggcccgcg ccaccgccac cgtgtgtggc caccacacc ccgaaagcat
41451 cagcccagcc accgcgttca aagacctcg aatcgattcg ctgaccgccc
41501 ttgaactgcy caacaccctc acccacaaca ccggcctgga tctgcccccc
41551 accctcatct tcgatcacc caccacccat gcgctaacc aacacctgca
41601 cacccgactc acccaaagcc atacccggt cggaccaatt gcgtccctgc
41651 taagccacgc gatcgatgag ggcaaattcc gtgccggcgc tgacctattg
41701 atggccgcat ccaatttgaa ccaaagtctc agcaatatgg ctgaactcaa
41751 ccagctcccg gccgtgacgg acatagctga cgcgtctcct gatgggctac
41801 tcaccctgat ctgcatctct acctagaga atgagtacgc tcgcctcgct
41851 gctgcgaaca ttcatctact gaccttcgct gaaattgcgg cggccggctt
41901 ttacgacgcy cagctgcaa attcgataga gacgtcgga gaggcgctgg
41951 caactgccat cacaggcgcc tacgcaaata cgtccattgt tctggtagcg
42001 cactccattg tctgcgagct agctcaggca acgatgacac gtctacaaga
42051 cgctgacatc gatcttgttg gtctggttct gttggatcca ctcgaggga
42101 ctaacagcac tgaagattat gtggagacag tcttgactcg aatcgagcat
42151 atcaatgcac cgagggtcgg agtagacggt taccttgccg ccctgggccc
42201 ctatctccaa ttccacgaag accgccgaat accaataccg gaaacgcggc
42251 acatgacact gcaactcgac acgaaaattg accgtgcca aacaccaatg
42301 aacttattac aagatgaggc agcgttgacc gccctcaaaa taggaaactg
42351 gatgaacgac gtgggtgttg ccctctctgt caaccttgag tga

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FIGURE 8(continued)

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Mup045 gene

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1   gtgatttggga atgacatcta cataagtggga acggggcggtt tcatcccgctc
51  aatgcgacca attaatgata tccagggtcga cgggtgttccg aatgatcata
101 ctatcgtgca atccgattac atttccttca ccgaagccga tgagccggct
151 acagtcattgg ccacgcgcgc tgcaaccgaa gcgctgacca cttccgagct
201 agtatccgct gatgttggcg tcttgatata tgccgcgatc atcggcgatg
251 cgcattcattt tgcccccgta tgtcacgtcc aaagagtcct ccgggcgccc
301 gatgcgctgg cattcgaact ttccgcagca agtaacggtg gaacacaagg
351 catcgcagtt gctgcaaadc tcatgacagc tgacgcgtcc gtgaaagctg
401 cactcgtttg tacagcttac cggcaccgca tcgatattat cagccgttgg
451 tcgtcaggta tggatttcgg cgatggagca gccgcgcgcg tgctttcaag
501 agacggcgga atgggtgcgat tgatttcggy gtatcacggc tcaactgccg
551 agctagaggt tcttgctaga aatcgatcca acgaacgact tggctttgtg
601 ctgccagacg tcgggttagg aaaataccta actgctatag cgcggatgta
651 ccaagcggtta attgcgcaag tactagaaga ggcacaaact agtattgccg
701 agatcgacta tttcggcctg atcggatatag gaattccaag tctcacagcg
751 actatcttag aacccaacgg tattccagtt aataaaaacat cctgggggtt
801 gctaagacaa atggggccacg ttggagcttg cgatcccctg ctgagcctta
851 accacctatt cgagcagaat gtcctcaagc gcggcgacaa agtcctactc
901 ctagggtggcg ggggtgggta tcgattgaca tgcattgtgg ctgaaatcgc
951 catgaatccc ggcgtgcccg gacactccac ttcgtag

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FIGURE 9

Mup053 gene

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1   gtgaggcaga gattgaactg gattgcggcg cacgggttgc tccgcggcac
51  cgcgcggtta gcggccccgc tgggcgacgt gcagtcgcgg ctggtggcag
101 atcccatggt tatggcaaac ccggcgccat tttgcgatga attgagggca
151 atcggccctg tgggtgtcgag ctacggcacc cactcgtcg ttagtcatgc
201 catcgcccat gaactgcttc ggtccgaaga cttcgaagtg gtctcgctcg
251 gatcgaactt gccggcacca atgcgctggc tagagcgccg cactcgggac
301 gatacgcccc atctgctgct gccgcgctcg ttgctggccg ttgagccgcc
351 gaatcacacg cgctatcgca aggcagtgtc ctcggtgttc acgccgaaag
401 cagtagccgg attacgcgat catgtcgaag agactgcgtc ggcgctgttg
451 gatcagctca ccgaccaggc tagtgccgtc gacatcatag cccgctactg
501 ctcccagctg ccggtcgcgg tcatttgtga catcttaggc gtgcccagtc
551 gagaccgaaa ccgtgttctc aagttcggtc agctggcggg gccctgcttg
601 gattttgggc tcacatggcg tcagcaccag caggtgcggc aagggtcca
651 aggactccac ttctggatca ccgagcacct cgaggaattg cgttctaacc
701 ccggtgacga tctgatgagt caaatgatcc acgcaagtga aaatggctcc
751 tcggaaacac acctccacgc aaccgaagtg cggatgatcg ggctggtgtt
801 gggcgccagt ttcgcaacaa cgatggacct gttaggcaac gggattcagg
851 tgttggttga cgcgcccga ctgcgggacg cgttgagtca gcgccgcaa
901 ctttggccca acgcggtaga agagatcctg cggttggagc caccggttca
951 gctcgccgga cgaatggctc gcaaggacac cgaggtggcg ggtaccgcaa
1001 tcaagcgggg ccagctggtg gcgatctatc tgggggcggg caaccgtgat
1051 ccgtccgtgt tcgccgatcc gcaccgctt gacatcacac gagccaacgc
1101 caaccggcat ctgcgattct ccggtggccg ccacttctgc ctcggtgccg
1151 cccttgcccc cgtcgaaggc gaagtccgat tgagaatgct cttagagcgc
1201 ttccctgacg tgcgcgccgc aggcccgga aatagacgtg atactcgaac
1251 tctgcggggg tggtcgcagc tgccggtcca gttgggcgca gcacgatcga
1301 tggctatccg atga

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FIGURE 10

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Mup038 gene

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1  atgattgttt ggcccgaagt ggtcagcaca gtggtcgacg tcgatggcgt
51  ggcgatgtcg gcactagtcg ccgaacccga tcaggagcct aaggccgtga
101 tcttagccct gcatggcggt gccaccaacg cgcggtatth cga.ctgccct
151 ggccaccgcy cgttttccct gctgcacacc ggcgcggcgg cgggattcac
201 cgttgtggcc cttgaccggc ccggctacgg cagctcggcg ggt.gatcccg
251 acgcgatgaa ccggcccccac cagcggggccg cgtggccta tggggcgctg
301 gatcgcatcc tggcgcagcg gccacgcggg gccgggggtg tcataatggg
351 ccattcaaac ggatgcgaac tggcgatgtg gatggccacc gagacgcgcg
401 gtgccgagct gctcggcatc gagttggctg gtaccggctg gcattatcag
451 cccgaggccc gagaaatcct gacaacggcc actggtgaac atcgggtgggt
501 gggcctctat gatttgcctt ggcatccgca gcggctatac ccgcccgagg
551 tcctcaacgc ggccatcatt tcttcgtccg ccccggccta cgaggagcag
601 atgatggccg actggacccg ccgaaccttc ctggagctag tccctgctgt
651 gcgtgtgccg gtacatttca gcatcgcca acacgaaaag gtt.tggcagc
701 gcgatagtto agcgctagat gaaatcgccg tcctgtttctc tggcgcgccg
751 cgtttcatcc tgcataaaca acccgaggcc ggacacaaca tcagcctggg
801 ccacaccgcc ggcgactacc acacgacagt cctgtcgttt gtc.cagcaat
851 gtctggccga acggttggcc aacgcgcaac aagatgtcga tct.cgcggcc
901 gagtga
```

FIGURE 11

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MlsA1 protein

VIFGDAHQNCRRGVRVLGDAVAVVGMSCRVPASDPDALWALLRDGI SVVDEIP SARWNLD
 GLVAHRLTDEQRSALRHGAFLDDVEGFDAAFFGINPSEAGSMDPQQRLMLELTWAALEDA
 RIVPEHLGSSSSGVFTGAMSDDYTTAVTYRAAMTAHTFAGTHRSLIANRVSYTLGLRGPS
 LVIDTGQSSSLVAVHVAMESLRREETSLAAGGIHLNLSLAAALSAAHFGALSPDGRCYT
 FDARANGYVRGEGGGVVVLKRLNDALADGNHIYCVIRGSSVNNDGATQDLTAPGVDGQRQ
 ALLQAYERAEIDPSEVQYVELHGTGTRLGDPTEAHSLSVFGTSTVPRSPLLVGSIKTNI
 GHLEGAAGILGLIKTALAVHHRQLPPSLNYTVPNKIPLEQLGLRVQTTLSEWPDLDKPL
 TAGVSSFSMGGTNAHLILQQPPTPDTTQTPNPTTGSDPAVGSDPAVGVLVWPLSARSAPG
 LSAQAARLYQHLSAHPDLDPIDVAHSLATTRSHHPRATITTSIEHHSENNHDTTDALAA
 LHALANNGTHPLLSRGLLTPQGPVKTVFVFPQGSGQYPGMGADLYRQFPVFAHALDEVA
 ALNPHLDVALLEVMSQQDTAMAQLLDQTFYAQPALFALGTALHRLFTHAGIHPDYLLGH
 SIGELTAAYAAGVLSLQDAATLVTSRGRMQSCTPGGTMLALQASEAEVQPLLEGLDHAV
 SIAAINGATSIVLSGDHDSLEQIGEHFITQDRRTTRLQVSHAFHSPHMDPILEQFRQIAA
 QLTFSAPTLPILSNLTGQIARHDQLASPDYWTQQLRNTVRFHDTVAALLGAGEQVFLELS
 PHPVLTOAITDTVEQAGGGGAAPALRKDRPDVAFAAALGQLHCHGISPSWNVLYCQAR
 PLTLPTYAFQHORYWLLPTAGDFSGANTHAMHPLLDTATELAENRGWVFTGRISPRTQPW
 LNEHAVESAVLFPNTGFVELALHVADRAGYSSVNELIVHTPLLLAGHDTADLQITVTDTD
 DMGRQSLNIHSHPHIGHDNTTTGDEQPEWVLHASAVLTAQTTDHNHLPLTPVPWPPPGTA
 AIEVDFFYDDLAAQGYNYGPTFQGVQRIWRDHATPDVIYAEVELPEDTDDIDGYGIHPALF
 DAALHPLLALTQPPNTDDTNTADTGDQVRLPYAFTGISLHATHATRLRVRLTRTGADA
 ITVHTSDTTGAPVAIIDSLITRPLTTATGSAPATTAAGLLHLSWPPHPDTTTTDTDTD
 LRYQVIAEPTQQLPRYLHDLHTSTDHSTTEADVVPVPSNEELQAHQASDTAVSS
 RIHTLTRQTLTVVQDWLTHPDTTGTRLVIVTRHGVSTSAHDPVPDLAHAAVWGLIRSAQN
 EHPGRFTLLDNTNSDTLTALTLPPTRENQLAIRRDTIHIPRLTRHSSDGALTAPVVV
 DPEGTVLITGGTGTGLGALFAEHLVSAHGVRHLLLSRRGPQAHGATDLQQRLLDLGAHVT
 ITACDISDPEALALVNSVPTQHRLTAVVHTAAVLADTPVTELTGDQLDQVLAPKIDAAW
 QLHQLTYEHNLSAFIMFSSMAGMIGSPGQGNYYAANTALDALADYRHRLGLPATSLAWGY
 WQHTHTGLTAHLTDVLDIARMTRLGLMPIATSHGLALFDAALATGQPVSIAPAPINTHTLARH
 ARDNTLAPILSALITTPRRRAASAATDLAARLNLSPQQQQQTLATLVAAATATVLGHHT
 PESISPATAFKDLGIDSLTALRLNTLTHTGNLSSSTLIFDHPTPHAVAHEHLEQIPGI
 GALVPAPVVIAGRTEEPVAVVGMACRFPGGVASADQLWDLVIAGRDRVGNFPADRGWDV
 EGLFDPDPAVGKTYTRYGAFLDDAAGFDAGFFGISPREARAMDPQQRLLLEVCWEALET
 AGIPAHTLAGTSTGVFVGAWAQSYGATNSDDAEGYAMTGGATSVMSGRIAYTLGLEGPAT
 TVDTACSSSLVAIHLACQSLRNNEQLALAGGVTVMSTPAVFTDFSRQRLAPDGRCKAF
 AATADGTGWGEGAVALVLERLSEARRNNHPVLAIVAGSAINQDGASNGLTAPHGPSQQRV
 INQALANAGLTHDQVDAVEAHGTGTLGDPPIEAGALHATYGHHTPDQPLWLGSIKSNIG
 HTQAAAGAAGVVKMIQAITHATLTPATLHVDQPSPHIDWSSGTVRLLTEPIQWPNTDHPRT
 AAVSSFGISGTNAHLILQQPPTPDTTQTPNPTTGSDPAVGSDSAVGSDPAVGVLVWPLSA
 RSAPGLSAQAARLYQHLSAHPDLDPIDVAHSLATTRSHHPRATITTSIEHHSENNHDTT
 DALAALHALANNGTHPLLSRGLLTPQGPVKTVFVFPQGSGQYPGMGADLYRQFPVFAHAL
 DEVAALNPHLDVALLEVMSQQDTAMAQLLDQTFYAQPALFALGTALHRLFTHAGIHPD
 YLLGHSIGELTAAYAAGVLSLQDAATLVTSRGRMQSCTPGGTMLALQASEAEVQPLLEG
 LDHAVSIAAINGATSIVLSGDHDSLEQIGEHFITQDRRTTRLQVSHAFHSPHMDPILEQF
 RQIAAQLTFSAPTLPILSNLTGQIARHDQLASPDYWTQQLRNTVRFHDTVAALLGAGEQV
 FLELSPHPVLTOAITDTVEQAGGGGAAPALRKDRPDVAFAAALGQLHCHGISPSWNVLY
 CQARPLTLPTYAFQHORYWLLPTAGDFSGANTHAMHPLLDTATELAENRGWVFTGRISP
 RTQPDWLNHVESAVLFPNTGFVELALHVADRAGYSSVNELIVHTPLLLAGHDTADLQIT
 VTDTDMDGRQSLNIHSRPHIGHDNTTTGDEQPEWVLHASAVLTAQTTDHNHLPLTPVPWP
 PPGTAIEVDFFYDDLAAQGYNYGPTFQGVQRIWRDHATPDVIYAEVELPEDTDDIDGYGI
 HPALFDAALHPLLALTQPPNTDDTNTADTGDQVRLPYAFTGISLHATHATRLRVRLTR
 TGADAITVHTSDTTGAPVAIIDSLITRPLTTATGSAPATTAAGLLHLSWPPHPDTTTTD
 TDDALRYQVIAEPTQQLPRYLHDLHTSTDHSTTEADVVPVPSNEELQAHQASD
 TAVSSRIHTLTRQTLTVVQDWLTHPDTTGTRLVIVTRHGVSTSAHDPVPDLAHAAVWGLI
 RSAQNEHPGRFTLLDNTNSDTLTALTLPPTRENQLAIRRDTIHIPRLTRHSSDGALT
 APVVVDPEGTVLITGGTGTGLGALFAEHLVSAHGVRHLLLSRRGPQAHGATDLQQRLLD

FIGURE 12

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GAHVTTITACDISDPEALALVNSVPTQHRLTAVVHTAAVLADTPVTELTGDQLDQVLAPK
IDAAWQLHQLTYEHNLSAFIMFSSMAGMIGSPGQGNYYAANTALDALADYRHRGLPATSL
LAWGYWQTHHTGLTAHLTDVDLARMTRLGLMPIATSHGLALFDAALATGQPVSI PAPINTH
TLARHARDNTLAPILSALITTPRRRAASAATDLAARLNGLSPOQQQQQTLATLVAAATATV
LGHHTPESISPATAFKDLGIDSLTALELRNTLTHNTGLNLSSTLIFDHPTPHAVAEHLLE
QIPGIGALVPAPVVIAAGRTEEPVAVVGMACRFPGGVASADQLWDLVIAGRVDVVGNF PAD
RGWDVEGLFDPDPDAVGKTYTRYGAFLDDAAGFDAGFFGISPREARAMDPQQRLLLEVCW
EALETAGIPAHTLAGTSTGVFVGAGAQSYGATNSDDAEGYAMTGGATSVMSGRIAYTLGL
EGPAITVDTACSSSLVAIHLACQSLRNNESSLALAGGVTVMSTPAIFTEFSRQRGLAPDG
RCKAFAATADGTGWGEGAAVLVLERLSEARRNNHPVLAIVAGSAINQDGASNGLTAPHGP
SQQRVINQALANAGLTHDQVDAVEAHGTGTTLGDPFIEAGALHATYGHHTPDQPLWLGS
KSNIGHTQAAAGAAGVVKMIQAI THATLTPATLHVDQPSPHIDWSSGTVRLLTEPIQWPNT
DHPRTAAVSSFGISGTNAHLILQQPPTPDTTQTPNPTTGSDPAVGSDSAVGSDPAVGVLV
WPLSARSAPGLSAQAARLYQHLSAHPDLDPIDVAHSLATTRSHHPRATITTSIEHHSEN
NHDTTDALAALHALANNGTHPLLSRGLLTPOGPGKTVFVFPQGGSQYPGMGADLYRQFPV
FAHALDACDAALQPF TGWSVLAVLHDEPEAPSLERVDVVPVLF SVMVSLAALWRWAGIT
PDAVIGHSQGEIAAAHVAGALTPEAAAVVALRSRVLTDLAGAGAMASVLSPEEPLTQLL
ARWDGKITVAAVNGPASAVVSGDTTAITELLITCEHENIDARAI PVDYPSHSPYMEHIRH
QFLDELPELT PRPSTIAMYSTVDGEPHDTAYDTTMTADYWRNIRNTVRFHDTVAALLG
AGEQVFLFELSPHPVLTQAITDTVEQAGGGGAAPALRKDRPD AVAFAAALGQLHCHGISP
SWNVLYCQARPLTLPTAFQHRYWLLPTAGDFSGANTHAMHPLLDTATELAENRGWVFT
GRISPRTPQWLNEHAVESAVLFPGTGFVELALHVA DRAGYSSVNELIVHTPLLLAGHDTA
DLQITVTD TDDMGRQSLNIHSRPHIGHDNTTTGDEQPEWVLHASAVLTAQT TDHNLPLT
PVPWPPPGTAAIEVDDFYDDLAAQGYNYGPTFQGVQRIWRDHATPDVIYAEVELPEDTDI
DGYGIHPALFDAALHPLLALTQPPNTDDTNTADTGDQVRLPYAFTGISLHATHATRLR
VRLTRTGADAITVHTSDTTGAPVAIIDSLITRPLTTATGSAPATTAAGLLHLSWPPHPDT
TTDTDTDTDALRYQVIAEPTQQLPRYLHDLTSTDLHTSTTEADV VVWPVPSNEELQA
HQASDTAVSSRIHTLRTQTLTVVQDWLTHPDTTGTRLVIVTRHGVSTSAHDPV PDLAHAA
VWGLIRSAQNEHPGRFTLLD TDDNTNSDTLTALTPTRENQLAIRRDTIHIPRLTRTAV
LTPPDSGPWRLD TTGKGDLANLALLPTAHTALASGQIRIDVRAAGLNFHDVVVALGLIPD
DGFGGEAAGVISEIGPDVYGFAVGDAVTGMTVSGAFAPSTVADHRMVM TI PARWSFPQAA
SIPVVF LTAYIALAEISGLSRGQRVLIHAGTG GVGMAAIQLAHLGA EVFATA SAAKWT
LEALGVPRDHIASSRTLD FSNAFLDATNGAGVDVVLNCLSGEFVEASLALLPRGGHFVEI
GKTDIRDTEVIAATHPGVIYRALDLSVSPDHIQRTLAQLSPLFATDTLKLPTTNYSIY
QAI SALRDM SQARHTGKIVLTAPVVVDPEGTVLITGGTGTLGALFAEHLVSAHGVRHLLL
TSRRGPQAHGATDLQQLTDLGAHVTTITACDISDPEALALVNSVPTQHRLTAVVHTAVV
LADTPVTELTGDQLDQVLAPKIDAAWQLHQLTYEHNLSAFIMFSSMAGMIGSPGLGNYYA
ANTALDALADYRHRGLPATSLAWGYWQTRTGLTAHLTDVDLARMTRLGLMPIATSHGLA
LFDAAALATGQPVSI PAPINTHTLARHARDNTLAPILSALITTPRRRAASAATDLAARLNG
LSPQQQQQTLATLVAAATATVLGHHTPESISPATAFKDLGIDSLTALELRNTLTHNTGLN
LSSTLIFDHPTPHAVAEHLLEQIPGIGALVPAPVVIAAGRTEEPVAVVGMACRFPGGVAS
ADQLWDLVIAGRVDVVGNF PADRGWDVEGLFDPDPDAVGKTYTRYGAFLDDAAGFDAGFFG
ISPREARAMDPQQRLLLEVCWEALETAGIPAHTLAGTSTGVFVGAGAQSYGATNSDGAEG
YAMTGGAISVMSGRIAYTLGLEGPATVDTACSSSLVAIHLACQSLRNNESSLALAGGVTV
VMSTPAIFTEFSRQRGLAPDGRCKAFAATADGTGFGEGAAVLVLERLSEARRNNHPVLAIV
VAGSAINQDGASNGLTAPHGPSQQRVINQALANAGLTHDQVDAVEAHGTGTTLGDPFIEAS
ALHATYGHHTPDQPLWLGSIKSNIGHTQAAAGAAGVVKMIQAI THATLTPATLHVDQPS
PHIDWSSGTVRLLTEPIQWPNTDHPRTAAVSSFGISGTNAHLILQQPPTPDTTQTPNPTTG
SDPAVGSDSAVGSDPAVGVLVWPLSARSAPGLSAQAARLYQHLSAHPDLDPIDVAHSLAT
TRSHHPRATITTSIEHHSEN NHDTTDALAALHALANNGTHPLLSRGLLTPOGPGKTVFV
FPGQGSQYPGMGADLYRQFPVFAHALDACDAALQPF TGWSVLAVLHDEPEAPSLERVDV
QPVLF SVMVSLAALWRWAGITPDAVIGHSQGEIAAAHVAGALTPEAAAVVALRSRVLTDL
LAGAGAMASVLSPEEPLTQLLARWDGKITVAAVNGPASAVVSGDTTAITELLITCEHENI
DARAI PVDYPSHSPYMEHIRHQFLDELPELT PRPSTIAMYSTVDGEPHDTAYDTTMTAD
YWRNIRNTVRFHDTVAALLGAGEQVFLFELSPHPVLTQAITDTVEQAGGGGAAPALRKD
RPDAVAFAAALGQLHCHGISPSWNVLYCQARPLTLPTAFQHRYWLLPTAGDFSGANTH

FIGURE 12(continued)

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AMHPLLDTATELAENRGWVFTGRISPRTQPWLNEHAVESAVLFPGTGFVELALHVA DRAG
 YSSVNELIVHTPLLLAGHDTADLQITVTD TDDMGRQSLNIHSRPHIGHDNTTTGDEQPEW
 VLHASAVLTAQTTDHNHPLTPVPWPPPGTAAIEVDDFYDDLAAQGYNYGPTFQGVQRIW
 RDHATPDVIAEVELPEDTDIDGYGIHPALFDAALHPLLALTQPPTNDTDDTNTADTGDQ
 VRLPYAFTGISLHATHATRLRVRLTRTGADAITVHTSDTTGAPVAIIDSLITRPLTTATG
 SAPATTAAGLLHLSWPPHPDTTTTDDTD DALRYRVIAEPTQQLPRYLHDLHTSTDLHTS
 TTEADVVPVPVPSNEELQAHQASDTAVSSRIHTLTRQTLTVVQDWLTHPDTTGTRLVI
 VTRHGVSTSAHDPVPDLAHA AVWGLIRSAQNEHPGRFTLLD TDDNTNSDTLTALTLPTR
 ENQLAIRRDTIHIPRLTRHSSDGALTAPVVVDPEGTVLITGGTGTGALFAEHLVSAHGV
 RHLLLTSSRGPQAHGATDLQORLTD LGAHVTITACDISDPEALAAALVNSVPTQHRLTAVV
 HTAAVLADTPVTELTGDLQDLQVLAPKIDAAWQLHQLTYEHNLSAFIMFSSMAGMIGSPGQ
 GNYAAANTALDALADYRHLGLPATSLAWGYWQHTGTLTAHLTDVDLARMTRLGLMPIAT
 SHGLALFDAALATGQPVSI PAPINTHTLARHARDNTLAPILSALITTPRRRAASAATDLA
 ARLNGLSPQQQQOTLATLVAAATATVLGHHTPESISPATAFKDLGIDSLTALELRNTLTH
 NTGLDLPPTLIFDHPTPTALTQHLHTRLTGALVPAPVVIAGRTEEPVAVVGMACRFPG
 GVASADQLWDLVIAGR DVGNFPADRGWDVEGLFDPDPDAVGKTYTRYGAFLDDAAGFDA
 GFFGISPREARAMDPQORLLLEVCWEALETAGIPAHTLAGTSTGVFVGAWAQSYGATNSD
 DAEGYAMTGGAISVMSGRIAYTLGLEGPATVDTACSSSLVAIHLACQSLRNNESQLALA
 GGVTVMSTPAVFTEFSRQRLAPDGRCKAFAATADGTGFGEGA AVLVLERLSEARRNNHP
 VLAIVAGSAINQDGASNGLTAPHGPSQQRVINQALANAGLTHDQVDAVEAHGTGTTLGDP
 IEAGALHATYGHHTPDQPLWLGSIKSNIGHTQAAAGAAGVVKMIQAI THATLPATLHVD
 QPSPHIDWSSGTVRLLTEPIQWPNTDHPRTAAVSSFGISGTNAHLILQQPPTPDTTQTPN
 TTTGSDPAVGSDPAVGVLVWFLSARSAPGLSAQAARLYQHLSAHPDLDPIDVAHSLATTR
 SHHPHRTAITTTSIEHSENNDTTDALAALHALANNGTHPLLSRGLLT PQPGKTVFVFP
 GQGSQYPMGADLYRQFPVFAHALDACDAALQPTGWSVLAVLHDEPEAPSLERVDVQV
 VLFVSMVSLAALWRWAGITPDAVIGHSQGEIAAAHVAGALTPEAAAVVALRSRVLTDLA
 GAGAMASVLSPEEPLTQLLARWDGKITVA AVNGPASAVVSGDTTAITELLITCEHENIDA
 RAI PVDYPSHSPYMEHIRHQFLDELPELTTPRPSTIAMYSTVDGEPHDTAYDTTMTADYW
 YRNIRNTVRFHDTVAALLGAGEQVFLELSPHPVLTAITD TVEQAGGGGA AVPALRKDRP
 DAVAFAAALGQLHCHGISPSWNVLYCQARPLTLPTYAFQHORYWLLPTAGDFSGANTHAM
 HPLLDTATELAENRGWVFTGRISPRTQPWLNEHAVESAVLFPGTGFVELALHVA DRAGYS
 SVNELIVHTPLLLAGHDTADLQITVTD TDDMGRQSLNIHSHPHIGHDNTTTGDEQPEWVL
 HASAVLTAQTTDHNHPLTPVPWPPPGTAAIEVDDFYDDLAAQGYNYGPTFQGVQRIWRD
 HATPDVIAEVELPEDTDIDGYGIHPALFDAALHPLLALTQPPTNDTDDTNTADTGDQVR
 LPYAFTGISLHATHATRLRVRLTRTGADAITVHTSDTTGAPVAIIDSLITRPLTTATGSA
 PATTAAGLLHLSWPPHPDTTTTDDTD DALRYQVIAEPTQQLPRYLHDLHTSTDLHTSTT
 EADVVPVPVPSNEELQAHQASDTAVSSRIHTLTRQTLTVVQDWLTHPDTTGTRLVIVT
 RHGVSTSAHDPVPDLAHA AVWGLIRSAQNEHPGRFTLLD TDDNTNSDTLTALTLPTR
 QLAI RRD TIHIPRLTRTAVLT PPD SG PWRLDTTGKGD LANLALLPTAHTALASGQIRIDV
 RAAGLNFDHVVALGLIPDDGFGGEAAGVISEIGPDVYGFVGDVAVTGMTVSGAFAPSTV
 ADHRMVTIPARWSFQAASI PVVFLTAYIALAEISGLSRGQRVLIHAGTGGVGMAAIQL
 AHHLGAEVFATASAAKWSTLEALGVPRDHIASSRTLDFSNAFLDATNGAGVDVVLNCLSG
 EFVEASLALLPRGGHFVEIGKTDIRDTEVIAATHPGVIYRALDLSVSPDHIQRTLAQLS
 PLFATDTLKPLPTTNYSIYQAI SALRDMSQARHTGKIVLTAPVVVDPEGTVLITGGTGTG
 GALFAEHLVSAHGVRLHLLTSRRGPQAHGATDLQORLTD LGAHVTITACDISDPEALAAAL
 VNSVPTQHRLTAVVHTAAVLADTPVTELTGDLQDLQVLAPKIDAAWQLHQLTYEHNLSAFI
 MFSSMAGMIGSPGQGN YAAANTALDALADYRHLGLPATSLAWGYWQHTGTLTAHLTDVD
 LARMTRLGLMPIATSHGLALFDAALATGQPVSI PAPINTHTLARHARDNTLAPILSALIT
 TPRRRAASAATDLAARL NGLSPQQQQOTLATLVAAATATVLGHHTPESISPATAFKDLGI
 DSLTALELRNTLTHNTGLNLSSTLIFDHPTPHAVA EHLLEQIPGIGALVPAPVVIAGRT
 EEPVAVVGMACRFPGGVASADQLWDLVIAGR DVGNFPADRGWDVEGLFDPDPDAVGKTY
 TRYGAFLDDAAGFDAGFFGISPREARAMDPQORLLLEVCWEALETAGIPAHTLAGTSTGV
 FVGAGAQSYGATNSDDAEGYAMTGGATSVMSGRIAYTLGLEGPATVDTACSSSLVAIHL
 ACQSLRNNESQLALAGGVTVMSTPAVFTEFSRQRLAPDGRCKAFAATADGTGFGEGA AV
 LVLERLSEARRNNHPVLAIVAGSAINQDGASNGLTAPHGPSQQRVINQALANAGLTHDQV
 DAVEAHGTGTTLGDP IEAGALHATYGHHTPDQPLWLGSIKSNIGHTQAAAGAAGVVKMI
 QAI THATLPATLHVDQPSPHIDWSSGTVRLLTEPIQWPNTDHPRTAAVSSFGISGTNAHL

FIGURE 12(continued)

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ILQQPPTPNPTQTPEDCSPAQSPCATITDAGTGLSFVPWVISAKSAEALSAQASRLLTRI
 DDDPVVDAIDLGWSLIATRSMFEHRAVVVGADRHQLQRGLAELASGNLGADVVGRRARA
 GETVMVFPQGQSQRGLMGAAQLYEQFPVFAAAFDDVVDALDQYLRLPLRQVMWGDDEGLLN
 STEFAQPSLFAVEVALFALLRFWGVVPDYVIGHSVGELAAQVAGVLSLQDAAKLVSARG
 RLMQALPAGGAMVAVAAASQHEVEPLLVEGV DIAALNAPGSVVISGDQAAVRLIANRLADR
 GYRAHELAVSHAFHSSLMPEPMLEEFARLASEIVVEQPQIPLISNVTGQLANADYGSAGYW
 VDHIRRPVRFADSVASLEAMGASCFIEVGPASGLGAAIEQSLKSAEPTVSVSALSTDKPE
 SVAVLRAAARLSTSGIPVDWQSVFDGRSTQTVNLPTYAFQQRQFWDANRIGQGD PASQP
 QAQNVESRFWEAVEREDVDGLADSIGVTASAMQTVLPALSSWRRRAERTQSELD SWRYQVT
 WLSPPATPSSITLSGIWLLIVPSELAKTDPVIGCAAALAEHAGALVTIITI FEPDFNRS LM
 GASLKDIGSHISGVISFLGIHGSEFSDSGAVKTLNLVQAMGDVHLDVPLWCLTQGA VSIS
 ADDLIRCSSAALVWGLGRVVALEHPGSWGG LVDLPESPDDAAWERLCALLAQPTDEDQFA
 IRPSGVFLRRLIHAPATTTSKSSSTAWAPRGTVLITGGTGALGAHVARWLAHKYESVDLLL
 TSRRGMAADGATELVDDLRTAGASVTVHACDVTDRTSVEAAIAGKSLDAVFHLAGRHQPT
 LLTELEDESFSDELAPKVHGAQVLSDITSNLTLSAFVMFSSVAGIWWGKSQGAYAAANAF
 LDSLAEKRRITGLPATSVAWGLWAGGGMGDRPSASGLNLI GLKMSADLAVQALS DAIDR
 PQATLTVASVNWDRFYPTFALARPRPFLHEITEVMAYRESMRSSSASTATLLTSKLAGLT
 ATEQRAVTRKLVLDQAASVLGYASTESLDTHESEFKDLGFDLSLTALELRDHLQTATGLNLS
 STLIFDHPTPHAVA EHLLEQIPGIGALVPAPV VIAAGRTEEPVAVVGMACRFPGGVASAD
 QLWDLVIAGR DVGNFPADRGWDVEGLFDPDPAVGKTYTRYGAFLDDAAGFDAGFFGIS
 PREARAMDPQORLLLEVCWEALETAGIPAHTLAGTSTGVFAGAWAQSYGATNSDDAEGYA
 MTGGSTSVMSGRIAYTLGLEGPAITVDTACSSSLVAIHLACQSLRNNESQLALAGGVTVM
 STPAIFTEFSRQRGLAPDGRCKAFAATADGTGFGEGA AVLVLERLSEARRNNHPVLAIVA
 GSAINQD GASNGLTAPHGPSQQRVINQALANAGLTHDQVDAVEAHGTGTTLGDP IEASAL
 HATYGHHTPDQPLWLGSIKSNIGHTQAAAGAAGVVKMIQAI THATLPATLHVDQPSPHI
 DWSSGTVRLLTEPIQWPNTDHPRTAAVSSFGISGTNAHLILQQPPTPDTTQTPTNTTTGSD
 PAVGSDPAVGVLVWPLSARSAPGLSAQAARLYQHLSAHPDLDPIDVAHSLATTRSHHPHR
 ATITTSIEHHSENNHDTTDALAALHALANNGTHPLLSRGLLT PQGPGKTVFVFPQGGSQY
 PGMGADLYRQFPVFAHALDACDAALQPFTGWSVLAVLHDEPEAPSLERVDVVQPVLF SVM
 VSLAALWRWAGITPDAVIGHSQGEIAAAHVAGALTLP EAAAVVALRSRVLTDLAGAGAMA
 SVLSPEEPLTQLLARWDGKITVA AVNGPASAVVSGDTTATTELLITCEHENIDARAI PVD
 YPSHSPYMEHIRHQFLDELPELTPRPSTIAMYSTVDGEPHDTAYDTTMTADYWRNIRN
 TVRFHDTVAALLGAGEQVFEELSHPVLTQAITD TVEQAGGGGAAPALRKDRPD AVAFA
 AALGQLHCHGISPSWNVLYCQARPLTLPT YAFQHQRXYWLLPTAGDFSGANTHAMHPLLD T
 ATELAENRGWVFTGRISPRTPQWLNEHAVESAVLFPGTGFVELALHVADRAGYSSVNELI
 VHTPLLLAGHDTADLQITVTD TDDMGRQSLNIHSHPHIGHDNTTTGDEQPEWVLHASAVL
 TAQTTDHNLPLTPVPWPPPGTAAIEVDDFYDDLAAQGYNYGPTFQGVQRIWRDHATPDV
 IYAEVELPEDTDIDGYGIHPALFDAALHPLLALTQPPTNDTDDTNTADTGDQVRLPYAFT
 GISLHATHATRLRVRRLTRTGADAITVHTSDTTGAPVAIIDSLITRPLTTATGSAPATTAA
 GLLHLSWPPHPD TTTDTDTDTDALRYQVIAEPTQQLPRYLHDLHTSTTEADV VVWVPVFP
 SNEELQAHQASDTAVSSRIHTLTRQTLTVVQDWLTHPDTTGTRLVIVTRHGVSTSAHDPV
 PDLAHA AVWGLIRSAQNEHPGRFTLLD TDDNTNSDTLTALTLP TRENQLAIRRDTIHIP
 RLTRHSSDGALTAPVVVDPEGTVLITGGTGTLGALFAEHLVSAHGVRHLLLT SRRGPQAH
 GATDLQORLTDLGAHVITACDISDPEALALVNSVPTQHRLTAVVHTAAVLADTPVTEL
 TGDQLDQVLAPKIDAAWQLHQLTYEHNLSAFIMFSSMAGMIGSPGQGN YAAANTALDALA
 DYRHLGLPATSLAWGYWQHTGLTAHLTDVDLARMTRLGLMPIATSHGLALFDAALATG
 QPVSIPAPINTHTLARHARDNTLAPILSALITTPRRRAASAATDLAARLNGLS PQQQQQOT
 LATLVAAAATATVLGHHTPESISPATAFKDLGIDSLTALELRNTLTHTGLDLPPTLI FDH
 PTPHAVA EHLLEQIPGIGALVPAPV VIAAGRTEEPVAVVGMACRFPGGVASADQLWDLVI
 AGRDVVGNFPADRGWDVEGLFDPDPAVGKTYTRYGAFLDDAAGFDAGFFGISPREARAM
 DPQORLLLEVCWEALETAGIPAHTLAGTSTGVFAGAWAQSYGATNSDDAEGYAMTGGSTS
 VMSGRIAYTLGLEGPAITVDTACSSSLVAIHLACQSLRNNESQLALAGGVTVMSTPAVFT
 EFSRQRGLAPDGRCKAFAATADGTGFGEGA AVLVLERLSEARRNNHPVLAIVAGSAINQD
 GASNGLTAPHGPSQQRVINQALANAGLTHDQVDAVEAHGTGTTLGDP IEASALHATYGH
 HTPDQPLWLGSIKSNIGHTQAAAGAAGVVKMIQAI THATLPATLHVDQPSPHIDWSSGTV
 RLLTEPIQWPNTDHPRTAAVSSFGISGTNAHLILQQPPTPDTTQTPTNTTTGSDPAVGSDP
 AVGVVLWPLSARSAPGLSAQAARLYQHLSAHPDLDPIDVAHSLATTRSHHPHRATITTSI

FIGURE 12(continued)

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EHHSENNHDTTDLAALHALANNGTHPLLSRGLLTPOGPGKTVFVFPQGSQYPGMGADL
 YRQFPVFAHALDACDAALQPF TGWSVLAVLHDEPEAPSLERV DVVQPVLF SVMVSLAALW
 RWAGITPDAVIGHSQGEIAAAHVAGALTPEAAAVVALRSRVLTDLAGAGAMASVLSPEE
 PLTQLLARWDGKITVAAVNGPASAVVSGDTTATITELLITCEHENIDARAI PVDYPSHSPY
 MEHIRHQFLDELPELT PRPSTIAMYSTVDGEPHDTAYDTTMTADYWYRNIRNTVRFHDT
 VAALLGAGEQVFLELS PHPVLTQAITDTVEQAGGGGA AVPALRKDRPDAVAFAAALGQLH
 CHGISPSWNVLYCQARPLTLPT YAFQHORYWLLPTAGDFSGANTHAMHPLLD TATELAEN
 RGWVFTGRISPRTQPWLNEHAVESAVLFPGTGFVELALHVADRAGYSSVNELIVHTPLLL
 AGHDTADLQITVTD TDDMGRQSLNIHSRPHIGHDNTTTGDEQPEWVLHASAVLTAQT TDH
 NHLPLTPVPWPPPGTAAIEVDDFYDDLAAQGYNYGPTFQGVQRIWRDHATPDVIYAEVEL
 PEDTDIDGYGIHPALFDAALHPLLALTQPPTNDTDDTNTADTGDQVRLPYAFTGISLHAT
 HATRLRVRLTRTGADAITVHTSDTTGAPVAIIDSLITRPLTTATGSAPATTAAGLLHLSW
 PPHPDTTTDTDTDLALRYQVIAEPTQQLPRYLHDLHTSTDLHTSTTEADV VWPVPVPS
 NEELQAHQASDTAVSSRIHTLTRQTLTVVQDWLTHPD TTGTRLVIVTRHGVSTSAHDPVP
 DLAAHA VWGLIRSAQNEHPGRFTLLD TDDNTNSDTLTALTLP TRENQLAIRRDTIHIPR
 LTRTAVLT PPDSGPWRLD TTGKGD LANLALLPTAHTALASGQIRIDVRAAGLNFHDV VVA
 LGLIPDDGFGGEAAGVISEIGPDVYGFVAGDAVTGMTVSGAFAPSTVADHRMVM TIPARW
 SFPQAASIPVVF LTAYIALAEISGLSRGQRVLIHAGTGGVGMAAIQLAHLGA EVFATAS
 AAKWSTLEALGVPRDH IASSRTLD FSNAFLDATNGAGVDVVLNCLSGEFVEASLALLPRG
 GHFVEIGKTDIRDTEVIAATHPGVIYRALD LLSVSPDHIQRTLAQLSPLFATDTLKLPLT
 TNYSIYQ AISALRDM SQARHTGKIVLTAPVVVDPEGTVLITGGTGT LGALFAEHLVSAHG
 VRHLLTSRRGPQAHGATDLQQR LTLDLGAHVITITACDISDPEALAA LVNSVPTQHRLTAV
 VHTAAVLADTPVTELTGDQLDQVLAPKIDAAWQLHQLTYEHNLSAFIMFSSMAGMIGSPG
 QGNYAAANTALDALADYRHR LGLPATSLAWGYWQTRTGVT AHLTDVDLARMTR LGLMPIA
 TSHGLALFDAALATGQPVSI PAPINTHTLARHARDNTLTPILSALITTPRRRAASAATDL
 AARLNGLSPOQQOQT LATLVAAATATVLGHHT PESISPATAFKDLGIDSLTALELRNTLT
 HNTGLDLPPTLIFDHPTPTALTQHLHTRLT TGALVPAPV VIAAGRTEEPVAVVGMACRFP
 GGVASADQLWDLVIAGR DVGNFPADRGWDVAGLFDPDPDAVGKTYTRYGAFLDDAAGFD
 AGFFGISPREARAMDPQORLLLEV CWEALETAGIPAHTLAGTSTGVFVGAGAQSYGATNS
 DDAEGYAMTGG AISVMSGRIAYTLGLEGPATVDTACSSSLVAIHLACQSLRNNESQLAL
 AGGVTVMTSPAVFTDFSRQ RGLAPDGRCKAFAATADGTGFGE GA AVLVLERLSEARRNNH
 PVLAI VAGSAINQDGASNGLTAPHGPSQQRVINQALANAGLTHDQVD AVEAHGTGTTLGD
 PIEAGALHATYGHHTPDQPLWLGSIKSNIGHTQAAAGAAGVVKMIQAI THATLPATLHV
 DQPSPHIDWSSGTVRLLTEPIQWPNTDHPRTAAVSSFGISGTNAHLILQQPPTPDTTQTP
 NP TTGSDPAVGSDSAVGSDPAVGVLVWPLSARSAPGLSAQAARLYQHLSAHPDLDPIDVA
 HSLATTRSHHPH RATITTSIEHSENNHDTTDLAALHALANNGTHPLLSRGLLTPOGPG
 KTVFVFPQGSQYPGMGADLYRQFPVFAHALDEVAAALNPHLDVALLEV MFSSQQDTAMAQ
 LLDQTFYQAQPALFALGTALHRLFTHAGIHPDYLLGHSIGELTAAAYAAGVLSLQDAATLVT
 SRGRMQSCTPGGTMLALQASEAEVQPLLEGLDHAVSIAAINGATSIVLSGDHDSLEQIG
 EHFITQDRRTTR LQVSHAFHSPHMDPILEQFRQIAAQLTFSAPTLPILSNLTGQIARHDQ
 LASPDYWTQQLRNTVRFHDTVAALLGAGEQVFLELS PHPVLTQAITDTVEQAGGGGA AVP
 ALRKDRPDAVAFAAALGQLHCHGISPSWNVLYCQARPLTLPT YAFQHORYWLLPTAGDFS
 GANTHAMHPLLD TATELAENRGWVFTGRISPRTQPWLNEHAVESAVLFPNTGFVELALHV
 ADRAGYSSVNELIVHTPLLLAGHDTADLQITVTD TDDMGRQSLNIHSRPHIGHDNTTTGD
 EQPEWVLHASAVLTAQT TDHNLPLTPVPWPPPGTAAIEVDDFYDDLAAQGYNYGPTFQG
 VQRIWRDHATPDVIYAEVELPEDTDIDGYGIHPALFDAALHPLLALTQPPTNDTDDTNTA
 DTGDQVRLPYAFTGISLHATHATRLRVRLTRTGADAITVHTSDTTGAPVAIIDSLITRPL
 TTATGSAPATTAAGLLHLSWPPHPD TTTDTDTDTDLALRYQVIAEPTQQLPRYLHDLHT
 STLHTSTTEADV VWPVPVPSNEELQAHQASDTAVSSRIHTLTRQTLTVVQDWLTHPD T
 TGTRLVIVTRHGVSTSAHDPVPDLAAHA VWGLIRSAQNEHPGRFTLLD TDDNTNSDTLT
 ALTLP TRENQLAIRRDTIHIPRLTRHSSDGALTAPVVVDPEGTVLITGGTGT LGALFAEH
 LVSAHGVRHLLTSRRGPQAHGATDLQQR LTLDLGAHVITITACDISDPEALAA LVNSVPTQ
 HRLTAVVHTAAVLADTPVTELTGDQLDQVLAPKIDAAWQLHQLTYEHNLSAFIMFSSMAG
 MIGSPGQGNYAAANTALDALADYRHR LGLPATSLAWGYWQTHGLTAHLTDVDLARMTR L
 GLMPIATSHGLALFDAALATGQPVSI PAPINTHTLARHARDNTLAPILSALITTPRRRAA
 SAATDLAARLNGLSPOQQOQT LATLVAAATATVLGHHT PESISPATAFKDLGIDSLTALE
 LRNTLTHTGLDLPPTLIFDHPTPTALTQHLHTRLTQIESPNSEDSMLNLK NLDRIESYI
 FRNSGEDRAHVIANRLRSILSKWDGTRSPELPAELHLESATDDELFSLANMFRTPTSEIS
 PTLEGGRGVN*

FIGURE 12(continued)

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MlsA2 protein

VVSTEENLRVYLKQVITDLHQMQARLRKIEKQRSERVAVVGMACRFPGGVASADQLWDLV
 IAGRDVVGNF PADRGWDVEGLFDPDPDAVGKTYTRYGAFLLDDAAGFDAGFFGISPREARA
 MDPQQRLLLEVCWEALETAGIPAHTLAGTSTGVFVGAWAQS YGATNSDGAEGYAMTGGST
 SVMSGRIAYTLGLEGPATVDTACSSSLVAIHLACQSLRNNE SQLALAGGVTVMSTPAVF
 TEFSRQRLAPDGRCKAFAATADGTGWGEGAAVLVLERLSEARRNNHPVLAIVAGSAINQ
 DGASNGLTAPHGPSQQRVINQALANAGLTHDQVDAVEAHGTGTTLGDP IEASALHATYGH
 HHTPDQPLWLGSIKSNIGHTQAAAGAAGVVKMIQAITHATL PATLHVDQPSPHIDWSSGT
 VRLLTEPIQWPNTDHPRTAAVSSFGISGTNAHLILQQPPTPDTTQTPNTTTGSDPAVGSD
 SAVGSDPAVGVLVWPLSARSAPGLSAQAARLYQHLSAHPDLDPIDVAHSLATTRSHHPR
 ATITTSIEHHSENNHDTTDALAALHALANNGTHPLLSRGLLTPQGP GKTVFVFPQGGSQY
 PGMGADLYRQFPVFAHALDEVAAALNPHLDVALLEV MFSSQDDTAMAQLLDQTFYAQPALF
 ALGTALHRLFTHAGIHPDYLLGHSIGELTAAYAAGVLSLQDAATLVTSRGR LMQSCTPGG
 TMLALQASEAEVQPLLEGLDHA VSI AAINGATSIVLSGDHDSLEQIGEHFITQDRRTTLR
 QVSHAFHSPHMDPILEQFRQIAAQLTFSAPTLPILSNLTGQIARHDQLASPDYWTQQLRN
 TVRFHDTVAALLGAGEQVFLELSPHPVLTQAITDTVEQAGGGGA AVPALRKDRPD AVAFA
 AALGQLHCHGISPSWNVLYCQARPLTLEPT YAFQHQR YWLLPTAGDFSGANTHAMHPLLD
 ATELAENRGWVFTGRISPRTPQWLNEHAVESAVLFPGTGFVELALHVADRAGYSSVNELI
 VHTPLLLAGHDTADLQITVTD TDDMGRQSLNIHSHPHIGHDNTTTGDEQPEWVLHASAVL
 TAQTTDHNLPLTPVPWPPPGTAAIEVDDFYDDLAAQGYNYGPTFQGVQRIWRDHATPDV
 IYAEVELPEDTDIDGYGIHPALFDAALHPLLALTQPP TNDTDDTNTADTGDQVRLPYAFT
 GISLHATHATRLRVR LTRTGADAITVHTSDTTGAPVAIIDSLITRPLTTATGSAPATTAA
 GLLHLSWPPHPD TTTD TDTDALRYQVIAEPTQQLPRYLHDLHTSTD LHTSTTEADV VV
 WPVPVPSNEELQAHQASDTAVSSRIHTLTRQTLTVVQDWLTHPD TTGTRLVIVTRHGVST
 SAHDPV PDLAHA AVWGLIRSAQNEHPGRFTLLD TDDNTNSDTLT TALTLPTRENQLAIRR
 DTIHIPRLTRTAVLTTPD SGFWRLDTTGKGD LANLALLPTAHTALASGQIRIDVRAAGLN
 FHDVVVALGLIPDDGFGGEAAGVISEIGPDVYGF AVGDAVTGMTVSGAFAPSTVADHRMV
 MTIPARWSFPQAASIPVVF LTAYIALAEISGLSRGQRVLIHAGTGGVGMAAIQLAHLGA
 EVFATASAAKWSTLEALGVPRDH IASSRTLD FSNAFLDATNGAGVDVVLNCLSGEFVEAS
 LALLPRGGHFVEIGKTDIRDTEVIAATHPGVIYRALD LLSVSPDHIQRTLAQLSPLFATD
 TLKPLPTTNYSIYQAI SALRDM SQARHTGKIVLTAPVVVDPEGTVLITGGTGTLGALFAE
 HLVS AHGVRHLLLT SRRGPOAHGATDLQQLR TDLGAHVTTITACDISDPEALAALVNSVPT
 QHRLTAVVHTAAVLADTPVTELTGDQLDQVLAPKIDAAWQLHQLTYEHNLSAFIMFSSMA
 GMIGSPGQGN YAAANTALDALADYRHRLGLPATSLAWGYWQTRTGVT AHLTDVDLARMTR
 LGLMPIATSHGLALFDAALATGQPVSIPAPINTHTLARHARDNTLT PILSALITTPRRRA
 ASAATDLAARLNGLS PQQQQQT LATLVAAATATVLGHHTPESISPATAFKDLGIDSLTAL
 ELRNTLTHNTGLDLPPTLI FDHPTPHALTQHLHTRLTQSHTPVGP IASLLSHAIDEGKFR
 AGADLLMAASN LNQSFSNMAELNQLPAVTDIADASPDGLLT LICISTSENEYARLAAANI
 HSLTFAEIAAPGFYDAQLPNSIETSAEALATAITGAYANTSIVLVAHSIVCELAQATMTR
 LQDADIDLVLVLLDPLEGTNSTEDYVETVLTRIEHINAPRVGVDGYLAALGRYLQFHED
 RRIPIPETRHMTLHSDTKIDRAQTPMNL LQDEAALTALKIGNWMNDTGSIAVTLRDGPVF
 LGRARSVNMR*

FIGURE 13

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MslB protein

VIFGDAHQNCRGGRVLGDAVAVVGMSCRVPGASDPDALWALLRDGISVVDEIP SARWNLD
 GLVAHRLTDEQRSALRHGAFLDDVEGFDAAFFGINPSEAGSMDPQQRMLLELTWAALEDA
 RIVPEHLGSSSSGVFTGAMSDDYTTAVTYRAAMTAHTFAGTHRSLIANRVSYTLGLRGPS
 LVIDTGQSSSLVAVHVAMESLRREETS LAIAGGIHLNLSLAAALSAAHFGALSPDGRCYT
 FDARANGYVRGEGGGVVVLKRLNDALADGNHIYCVIRGSSVNNDGATQDLTAPGVDGQRQ
 ALLQAYERAEIDPSEVQYVELHGTGTRLGDPTEAHSLSVFGTSTVPRSPLLVGSIKTNI
 GHLEGAAGILGLIKTALAVHHRQLPPSLNYTVPNPKIPLEQLGLRVQTTLSEWPDLDKPL
 TAGVSSFSMGGTNAHLILQQPPTPDTTQTNPPTTGS DPAVGSDPAVGVLVWPLSARSAPG
 LSAQAARLYQHLSAHPDLDPIDVAHSLATTRSHHPRATITTSIEHHSENNHDTTDALAA
 LHALANNGTHPLL SRGLLT PQGP GKT V F V F P G Q G S Q Y P G M G A D L Y R Q F P V F A H A L D E V A A
 ALNPHLDVALLEV MF SQD TAMAQLLDQTFYAQPALFALGTALHRLFTHAGIHPDYLLGH
 SIGELTAAYAAGVLSLQDAATLVTSRGRIMQSC TPGG TMLALQASEAEVQPLLEGLDHAV
 SIAAINGATSIVLSGDHDSLEQIGEHFITQDRRTTRLQVSHAFHSPHMDPILEQFRQIAA
 QLTFSAPTLPILSNLTGQIARHDQLASPDYWTQQLRNTVRFHDTVAALLGAGEQVFLS
 PHPVLTQAITDTVEQAGGGGAAPALRKDRPD AVAF AAALGQLHCHGISPSWNVLYCQAR
 PLTLPTYAFQHORYWLLPTAGDFSGANTHAMHPLLD TATELAENRGWVFTGRISPRTPQW
 LNEHAVESAVLFPNTGFVELALHVADRAGYSSVNELIVHTPLLLAGHDTADLQITVTDTD
 DMGRQSLNIHSHPHIGHDNTTTGDEQPEWVLHASAVLTAQTTDHNHLPLTPVPWP PPPGTA
 AIEVDDFYDDLAAQGYNYGPTFQGVQRIWRDHATPDV IYAEVELPEDTDIDGYGIHPALF
 DAALHPLLALTQPPTNDTNTADTGDQVRLPYAFTGISLHATHATRLRVRLTRTGADA
 ITVHTSDTTGAPVAIIDSLITRPLTTATGSAPATTAAGLLHLSWPPHPD TTTD TDTDTDA
 LRYQVIAEPTQQLPRYLHDLHTSTDLHTSTTEADV VVWPVPVPSNEELQAHQASDTAVSS
 RIHTLTRQTLTVVQDWLTHPD TTGTRLVIVTRHGVSTSAHDPVPDLAHA AVWGLIRSAQN
 EHPGRFTLLD TDDNTNSDTLTALTLP TRENQLAIRRDTIHI PRLTRHSSDGALTAPVVV
 DPEGTVLITGGTGTLGALFAEHLVSAHGVRHLLLT SRRGPQAHGATDLQQR L TDLGAHVT
 ITACDISDPEALAAALVNSVPTQHRLTAVVHTAAVLADTPVTELTGDQLDQVLAPKIDAAW
 QLHQLTYEHNLSAFIMFSSMAGMIGSPGQGN YAAANTALDALADYRHRGLPATSLAWGY
 WQHTGLTAHLTDVDLARMTRLGLMPIATSHGLALFDAALATGQPVSI PAPINTHTLARH
 ARNTLAPILSALITTPRRRAASAATDLAARLNGLS PQQQQTLATLVAAATATVLGHHT
 PESISPATAFKDLGIDSLTALELRNTLTHTNTGLNLSSTLIFDHPT PHAVA EHLLEQIPGI
 GALVPAPVVIAAGRTEEPVAVVGMACRFPGGVASADQLWDLVIAGR DVVG NFPADRGWDV
 EGLFDPDPDAVGKTYTRYGAFLDDAAGFDAGFFGISPREARAMDPQQRLLLEVCWEALET
 AGIPAHTLAGTSTGVFVGAWAQSYGATNSDDAEGYAMTGGATSVMSGRIAYTLGLEGP AI
 TVDTACSSSLVAIHLACQSLRNNE SQLALAGGVTVMSTPAVFTEFSRQ RGLAPDGRCKAF
 AATADGTGWGEGA AVLVLERLSEARRNNHPVLAIVAGSAINQDGASNGLTAPHGPSQQRV
 INQALANAGLTHDQVDAVEAHGTGTT LGDPIEASALHATYGHHTPDQPLWLGSIKSNIG
 HTQAAAGAAGVVKMIQAI THATLPATLHVDQPSPHIDWSSGTVRLLEPIQWPNTDHPRT
 AAVSSFGISGTNAHLILQQPPTPNPTQT PEDCSPAQSPCATITDAGTGLSFVPWVISAKS
 AEALSAQASRLRLRLDDDPVDAIDLGWSLIATRSMFEHRAVVVGADRHQLQRGLAE LAS
 GNLGADV VVGRARAAGETVMVFPGQGSQRLGMGAQLYEQFPVF AA AFDDVVDALDQYLRL
 PLRQVMWGDD EGLLNSTEF AQPSLFAVEVALFALLRFWGVVPDYVIGH SVGELAAAQVAG
 VLSLQDAAKLV SARGRLMQALPAGGAMVAVAASQHEVEPLLVEGVDIAALNAPGSVVISG
 DQAAVRLIANRLADRGYRAHELAVSHAFHSSLM EPMLEEFARLASEIVVEQPQIPLISNV
 TGQLANADYGSAGYWVDHIRRPVRFADSVASLEAMGASCFIEVGPASGLGAAIEQSLKSA
 EPTVSVSALSTDKPESVAVLRAAARLSTSGIPVDWQSVFDGRSTQTVNLPTYAFQRQRFW
 LDANRIGQGD PASQPQAQNVESRFWEAVEREDVDGLADSIGVTASAMQTVLPALSSWRR A
 ERTQSELD SWRYQVTWLSSPATPSSITLSGIWLLIVPSELAKTDPVIGCAAAL EAHGALV
 TIITIFEPDFNRSLMGASLKDIGSHISGVISFLGIHGSEFSDSGAVKTLNLVQAMGDVHL
 DVPLWCLTQGA VSI SADDLIRCSSAALVWGLGRVVALEHPSWGGGLVDLPESPDDAAWER
 LCALLAQPTDEDQFAIRPSGVFLRRLIHAPATTTSKSSTAWAPRGTVLITGGTGALGAHV
 ARWLAHKYESVDLLLT SRRGMAADGATELVDDLRTAGASVT VHACDVTDRTSVEAAIAGK
 SLDAVFHLAGRHQPTLLTELEDESFSDELAPKVHGAQVLS DITSNLTL SAFVMFSSVAGI
 WGGKSQGAYAAANAF LDSLAEKRRTLGLPATSVAWGLWAGGGMGDRPSASGLNLIGLKSM
 SADLAVQALS DAIDR PQATLTVASVNWDRFYPTFALARPRPFLHEITEVMAYRESMRSS
 ASTATLLTSKLAGLTATEQRAVTRKLVLDQAASVLGYASTESLDTHESFKDLGFDLSLTAL

FIGURE 14

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ELRDHLQTATGLNLSSTLI FDHPTPHAVAEHLEQIPGIGALVPAPVVIAAGRTEEPVAV
VGMACRFPGGVASADQLWDLVIAGR DVVGNFPADR GWDVEGLFDPDPDAVGKTYTRYGAF
LDDAAGFDAGFFGISPREARAMDPQORLLLEVCWEALETAGIPAHTLAGTSTGVFVGAWA
QSYGATNSDDAEGYAMTGGATSVMSGRIAYTLGLEGPATVDTACSSSLVAIHLACQSLR
NNE SQLALAGGVTVMTSPAVFTEFSRQRLAPDGRCKAFAATADGTGWGEGA AVLVLERL
SEARRNNHPVLAIVAGSAINQDGASNGLTAPHGPSQQRVINQALANAGLTHDQVDAVEAH
TGTTLGDP IEASALHATYGHHTPDQPLWLGSIKSNIGHTQAAAGAAGVVKMIQAITHA
TLPATLHVDQPSPHIDWSSGTVRLLTEPIQWPNTDHPRTAAVSSFGISGTNAHLILQOPP
TPNPTQTPEDCSPAQSPCATITDAGTGLSFVPWVISAKSAEALSAQASRLRLRLDDDPVV
DAIDLGWSLIATRSMEFHRVVVGADRHQLQRLAELASGNLGADV VVGRARAAGETVMV
FPGQGSQRLGMAQLYEQFPVFAAAFDDVVDALDQYLRLPLRQVMWGDDEGLLNSTEF AQ
PSLFAVEVALFALLRFWGVVDPDYVIGHSVGELAAAQVAGVLSLQDAAKLVSARGRLMQAL
PAGGAMVAVAAASQHEVEPLLVEGVDIAALNAPGSVVISGDQAAVRLIANRLADRGYRAHE
LAVSHAFHSSLMPEMLEE FARLASEI VVEQFQIPLISNVTGQLANADYGSAGYWVDHIRR
PVRFADSVASLEAMGASCFIEVGPASGLGAAIEQSLKSAEPTVSVSALSTDKPESVAVLR
AAARLSTSGIPVDWQSVFDGRSTQTVNLPTYAFQRQRFWLDANRIGQGD PASQPQAQNV
SRFWEAVEREDVDGLADSIGVTASAMQTVLPALSSWRAERTQSELD SWRYQVTWLSSPA
TPSSITLSGIWLLIVPSELAKTDPVIGCAAAL EAHGALVTIITIFEPDFNRSIMGASLKD
IGSHISGVISFLGIHGSEFSDSGAVKTLNLVQAMGDVHLDVPLWCLTQGA VSI SADDLIR
CSSAALVWGLGRVVALEHPGSWGGLVDLPESPDDAAWERLCALLAQPTDEDQFAIRPSGV
FLRRLIHAPATTTSKSSTAWAPRGTVLITGGTGALGAHVARWLAHKYESVDLLLT SRRGM
AADGATELVDDLRTAGASVT VHACDVTDRTSVEAAIAGKSLDAVFHLAGRHQPTLLTELE
DESFSEDELAPKVHGAQVLSDITSNLTLSAFVMFSSVAGI WGGKSQGAYAAANAF LDSLAE
KRRTLGLPATSVAWGLWAGGGMGRPSASGLNLIGLKSMSADLAVQALS DAIDRPOATLT
VASVNWDRFYPTFALARPRPFLHEITEVMAYRESMRSSSASTATLLT SKLAGLTATEQRA
VTRKLVLDQAASVLGYASTESLDTHESFKDLGFDLSLTALELRDHLQTATGLNLSSTLI FD
HPTPHAVAEHLEQIPGIGALVPAPVVIAAGRTEEPVAVVGMACRFPGGVASADQLWDLV
IAGR DVVGNFPADR GWDVEGLFDPDPDAVGKTYTRYGAF LDDAAGFDAGFFGISPREARA
MDPQORLLLEVCWEALETAGIPAHTLAGTSTGVFVGAWAQSYGATNSDDAEGYAMTGGAI
SVMSGRIAYTLGLEGPATVDTACSSSLVAIHLACQSLRNNE SQLAL TGGVTVMTSPAI F
TEFSRQRLAPDGRCKAFAATADGTGWGEGA AVLVLERLSEARRNNHPVLAIVAGSAINQ
DGASNGLTAPHGPSQQRVINQALANAGLTHDQVDAVEAHGTGTTLGDP IEASALHATYGH
HHTPDQPLWLGSIKSNIGHTQAAAGAAGVVKMIQAITHATLPATLHVDQPSPHIDWSSGT
VRLTEPIQWPNTDHPRTAAVSSFGISGTNAHLILQOPPPTD TTQTPTNTTGS DPAVGSD
PAVGVLVWPLSARSAPGLSAQAARLYQHLSAHPDLDPIDVAHSLATTRSHHPRATITTS
IEHHSENNHDTTDALAALHALANNGTHPLLSRGLLT PQGPGKTVFVFPGQGSQY PGMGAD
LYRQFPVFAHALDACDAALQFFTGWSVLAVLHDEPEAPSLERVDVVPVLF SVMVSLAAL
WRWAGITPDAVIGHSQGEIAAAHVAGALTPEAAAVVALRSRVLTDLAGAGAMASVLSPE
EPLTQLLARWDGKITVA AVNGPASAVVSGDTTAITELLITCEHENIDARAIPVDYPSHSP
YMEHIRHQFLDELPELT PRPSTIAMYSTVDGEPHDTAYDTTMTADYWRNIRNTVRFDH
TVAALLGAGEQVFLELSPHPVLTQAITD TVEQAGGGGAAPALRKDRPD AVAFAAALGQL
HCHGISPSWNVLYCQARPLTQAITD TVEQAGGGGAAPALRKDRPD AVAFAAALGQL
NRGWVFTGRISPRTPQPLNEHAVESAVLFPGTGFVELALHVADRAGYSSVNELIVHTPLL
LAGHDTADLQITVTD TDDMGRQSLNIHSRPHIGHDNTTTGDEQPEWVLHASAVLTAQT TD
HNHLPLTPVPWPPPGTAAIEVD D FYDDLAAQGYNGPTFQGVQRIWRDHATPDVIYAEVE
LPEDTDIDGYGIHPALFDAALHPLLALTQPPTNDTDDTNTADTGDQVRLPYAFTGISLHA
THATRLRVRLTRTGADAITVHTSDTTGAPVAI IDSLITRPLTTATGSAPATTAAGLLHLS
WPPHPDTTDTDTDTDALRYQVIAEPTQQLPRYLHDLHTSTDLHTSTTEADV VVWVPVVP
SNEELQAHQASDTAVSSRIHTLTRQTLTVVQDWLTHPD TTGTRLVIVTRHGVSTSAHPV
PDLAAHAVWGLIRSAQNEH PGRFTLLD TDDNTNSDTLTALTLP TRENQLAIRRDTIHIP
RLTRHSSDGALTAPVVVDPEGTVLTGGTGTLGALFAEHLVSAHGVRHLLLT SRRGPQAH
GATDLQQR LDTLGAHVITACDISDPEALALVNSVPTQHRLTAVVHTAAVLADTPVTEL
TGDQLDQVLAPKIDAAWQLHQLTYEHNLSAFIMFSSMAGMIGSPGQGN YAAANTALDALA
DYRHLGLPATSLAWGYWQHTGLTAHLTDVDLARMTRLGLMPIATSHGLALFDAALATG
QPVSIPAPINTHTLARHARDNTLAPILSALITTPRRRAASAATDLAARLNGLSPQQQQQT
LATLVAAATATVLGHHTPE SISPATAFKDLGIDSLTALELRNTLTHTNTGLDLPPTLI FDH
PTPHAVAEHLEQIPGIGALVPAPVVIAAGRTEEPVAVVGMACRFPGGVASADQLWDLVI

FIGURE 14(continued)

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AGRDVGNF PADRGWDVEGLFDPDPDAVGKTYTRYGAFLDDAAGFDAGFFGISPREARAM
 DPQORLLEVCWEALETAGIPAHTLAGTSTGVFAGAWAQSYGATNSDDAEGYAMTGGSTS
 VMSGRIAYTLGLEGPATVDTACSSSLVAIHLACQSLRNNEQLALAGGVTVMSTPAVFT
 EFSRQRLAPDGRCKAFAATADGTGFGEAAVLVLERLSEARRNNHPVLAIVAGSAINQD
 GASNGLTAPHGPSQQRVINQALANAGLTHDQVDAVEAHGTGTTLGDPIEASALHATYGH
 HTPDQPLWLGSIKSNIGHTQAAAGAAGVVKMIQAI THATLPATLHVDQPSPHIDWSSGT
 VRLLEPIQWPNTDHPRTAAVSSFGISGTNAHLILQQPPTPDTTQTPNPTTGSDPAVGSDP
 AVGVLVWPLSARSAPGLSAQAARLYQHLSAHPDLDPIDVAHSLATTRSHHPRATITTSI
 EHHSENNHDTTDALAALHALANNGTHPLLSRGLLTPQGPVKTVFVFPQGSQYPGMGADL
 YRQFPVFAHALDEVAALNPHLDVALLEVMSQQDTAMAQLLDQTFYAQPALFALGTALH
 RLFTHAGIHPDYLLGHSIGELTAAYAAGVLSLQDAATLVTSRGRIMQSCPTPGGTMLALQA
 SEAEVQPLLEGLDHAUSIAAINGATSIVLSGDHDSLEQIGEHFITQDRRTRLQVSHAFH
 SPHMDPILEQFRQIAAQLTFSAPTLPILSNLTGQIARHDQLASPDYWTQQLRNTVRFHDT
 VAALLGAGEQVFLLESPHPVLTQAITDTVEQAGGGGAAPALRKDRPDVAFAAALGQLH
 CHGISPSWNVLYCQARPLTLPTYAFQHORYWLLPTAGDFSGANTHAMHPLLDTATELAEN
 RGWVFTGRISPRTPQWLNEHAVESAVLFPGTGFEVALHVAADRAGYSSVNELIVHTPLLL
 AGHDTADLQITVTDTDMDGRQSLNIHSRPHIGHDNTTTGDEQPEWVLHASAVLTAQTDDH
 NHLPLTPVPWPPPGTAAIEVDDFYDDLAAQGYNYGPTFGQVQRIWRDHATPDVIYAEVEL
 PEDTDIDGYGIHPALFDAALHPLLALTQPPNTDDTNTADTGDQVRLPYAFTGISLHAT
 HATRLRVRLTRTGADAITVHTSDTTGAPVAIIDSLITRPLTTATGSAPATTAAGLLHLSW
 PPHPDTTDDTDDTDALRYQVIAEPTQQLPRYLHDLHTSTDLHTSTTEADVVPVVPVPS
 NEELQAHQASDTAVSSRIHTLTRQTLTVVQDWLTHPDTTGTRLVIVTRHGVSTSAHDPVP
 DLAAHAAWGLIRSAQNEHPGRFTLLDNTNSDTLTALTLPTRNQLAIRRDTIHIPR
 LTRHSSDGALTAPVVVDPEGTVLITGGTGTLGALFAEHLVSAHGVRHLLLTSTRRGPQAHG
 ATDLQORLTDLGAHVTTITACDISDPEALAALVNSVPTQHRLTAVVHTAAVLADTPVTELT
 GDQLDQVLAPKIDAAWQLHQLTYEHNLSAFIMFSSMAGMIGSPGQGNAAAANTALDALAD
 YRHLGLPATSLAWGYWQHTGLTAHLTDVLDLARMTRLGLMPIATSHGLALFDAALATGQ
 PVSIPAPINTHTLARHARDNTLAPILSALITTPRRRAASAATDLAARLNGLSPOQQQQT
 ATLVAATATVVLGHHTPESISPATAFKDLGIDSLTALELRNTLTHTNTGLDLPPTLIFDHP
 TPHAVAHEHLEQIPGIGALVPAPVVIAAGRTEEPVAVVGMACRFPGGVASADQLWDLVIA
 GRDVGNF PADRGWDVEGLFDPDPDAVGKTYTRYGAFLDDAAGFDAGFFGISPREARAMD
 PQORLLEVCWEALETAGIPAHTLAGTSTGVFAGAWAQSYGATNSDDAEGYAMTGGATSV
 MSGRIAYTLGLEGPATVDTACSSSLVAIHLACQSLRNNEQLALAGGVTVMSTPAVFT
 EFSRQRLAPDGRCKAFAATADGTGFGEAAVLVLERLSEARRNNHPVLAIVAGSAINQD
 ASNGLTAPHGPSQQRVINQALANAGLTHDQVDAVEAHGTGTTLGDPIEASALHATYGH
 HTPDQPLWLGSIKSNIGHTQAAAGAAGVVKMIQAI THATLPATLHVDQPSPHIDWSSGT
 VRLLEPIQWPNTDHPRTAAVSSFGISGTNAHLILQQPPTPDTTQTPNPTTGSDPAVGSDP
 AVGVLVWPLSARSAPGLSAQAARLYQHLSAHPDLDPIDVAHSLATTRSHHPRATITTSIE
 HHHSENNHDTTDALAALHALANNGTHPLLSRGLLTPQGPVKTVFVFPQGSQYPGMGADLY
 RQFPVFAHALDACDAALQPTGWSVLAVLHDEPEAPSLERVDVVPVLFVSMVSLAALWR
 WAGITPDAVIGHSQGEIAAAHVAGALTPEAAAVVALRSRVLTDLAGAGAMASVLSPEEP
 LTQLLARWDGKITVAAVNGPASAVVSGDTTITTELLITCEHENIDARAI PVDYPSHSPYM
 EHIRHQFLDELPELTTPRPSTIAMYSTVDGEPHDTAYDTTMTADYWYRNIRNTVRFHDTV
 AALLGAGEQVFLLESPHPVLTQAITDTVEQAGGGGAAPALRKDRPDVAFAAALGQLHC
 HGISPSWNVLYCQARPLTLPTYAFQHORYWLLPTAGDFSGANTHAMHPLLDTATELAENR
 GWVFTGRISPRTPQWLNEHAVESAVLFPGTGFEVALHVAADRAGYSSVNELIVHTPLLLA
 GHDTADLQITVTDTDMDGRQSLNIHSHPHIGHDNTTTGDEQPEWVLHASAVLTAQTDDH
 HLPLTPVPWPPPGTAAIEVDDFYDDLAAQGYNYGPTFGQVQRIWRDHATPDVIYAEVELP
 EDTDIDGYGIHPALFDAALHPLLALTQPPNTDDTNTADTGDQVRLPYAFTGISLHATH
 ATRLRVRLTRTGADAITVHTSDTTGAPVAIIDSLITRPLTTATGSAPATTAAGLLHLSW
 PPHPDTTDDTDDTDALRYRVIAEPTQQLPRYLHDLHTSTDLHTSTTEADVVPVVPVPSN
 EELQAHQASDTAVSSRIHTLTRQTLTVVQDWLTHPDTTGTRLVIVTRHGVSTSAHDPVPD
 LAHAAWGLIRSAQNEHPGRFTLLDNTNSDTLTALTLPTRNQLAIRRDTIHIPR
 LTRHSSDGALTAPVVVDPEGTVLITGGTGTLGALFAEHLVSAHGVRHLLLTSTRRGPQAHGA
 TDQLQORLTDLGAHVTTITACDISDPEALAALVNSVPTQHRLTAVVHTAAVLADTPVTELTG
 DQLDQVLAPKIDAAWQLHQLTYEHNLSAFIMFSSMAGMIGSPGQGNAAAANTALDALADY
 RHRLGLPATSLAWGYWQHTGLTAHLTDVLDLARMTRLGLMPIATSHGLALFDAALATGQ

FIGURE 14(continued)

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VSIPAPINTHTLARHARDNTLAPILSALITTPRRRAASAATDLAARLNGLSPQQQQOTLA
 TLVAAATATVLGHHTPESISPATAFKDLGIDSLTALELRNTLTHTNTGLDLPPTLI FDHPT
 PHAVAEHLLEQIPGIGALVPAPVVIAAGRTEEPVAVVGMACRFPGGVASADQLWDLVIAG
 RDVVGNF PADRGWDVEGLFDPDPDAVGKTYTRYGAFLDDAAGFDAGFFGISPREARAMDP
 QORLLLEVWCWEALETAGIPAHTLAGTSTGVFAGAWAQSYGATNSDDAEGYAMTGGATSVM
 SGRIAYTLGLEGPATITVDTACSSSLVAIHLACQSLRNNEQLALAGGVTVMSTPAVFTEF
 SRQGLAPDGRCKAFAATADGTGFGEAAVLVLERLSEARRNNHPVLAIVAGSAINQDGA
 SNGLTAPHGPSQQRVINQALANAGLTHDQVDAVEAHGTGTTLGDPPIEASALHATYGHHT
 PDQPLWLGSIKSNIGHTQAAAGAAGVVKMIQAI THATLPATLHVDQPSPHIDWSSGTVRL
 LTEPIQWPNTDHPRTAAVSSFGISGTNAHLILQQPPTPDTTQTPTNTTTGSDPAVGSDPAV
 GVLVWPLSARSAPGLSAQAARLYQHLSAHPDLDPIDVAHSLATTRSHHPHRATITTSIEH
 HSENNHDTTDALAALHALANNGTHPLLSRGLLTPOGPGKTVFVFPQGGSQYPMGADLYR
 QFPVFAHALDACDAALQFFTGWSVLAVLHDEPEAPSLERVDVVQPVLFVSMVSLAALWRW
 AGITPDAVIGHSQGEIAAAHVAGALTPEAAAVVALRSRVLTDLAGAGAMASVLSPEEPL
 TQLLARWDGKITVAAVNGPASAVVSGDTTAITELLITCEHENIDARAIPVDYPSHSPYME
 HIRHQFLDELPELTTPRSTIAMYSTVDGEPHDTAYDTTMTADYWRNIRNTVRFHDTVA
 ALLGAGEQVFLELSPHPVLTQAITDTVEQAGGGGAAPALRKDRPD AVAFAAALGQLHCH
 GISPSWNVLYCQARPLTLPTYAFQHORYWLLPTAGDFSGANTHAMHPLLDTATELAENRG
 WVTGRISPRTPQWLNEHAVESAVLFPGTGFVELALHVADRAGYSSVNELIVHTPLLLAG
 HDTADLQITVTDTDMDGRQSLNIHSRPHIGHDNTTTTGDEQPEWVLHASAVLTAQTTDHNH
 LPLTPVPWPPPGTAAIEVDDFYDDLAAQGYNYGPTFGQVQRIWRDHATPDVIYAEVELPE
 DTDIDGYGIHPALFDAALHPLLALTQPPNTDDTNTADTGDQVRLPYAFTGISLHATHA
 TRLRVRLTRTGADAITVHTSDTTGAPVAIIDSLITRPLTTATGSAPATTAAGLLHLSWPP
 HPDTTDTDTDDALRYQVIAEPTQQLPRYLHDLHTSTD LHTSTTEADVVPVPSNE
 ELQAHQASDTAVSSRIHTLTRQTLTVVQDWLTHPDTTGTRLVIVTRHGVSTSAHDPVPDL
 AHAAVWGLIRSAQNEHPGRFTLLDNTNSDTLTALTLP TRENQLAIRRDTIHIPRLT
 RHSSDGALTAPVVVDPEGTVLITGGTGTLGALFAEHLVSAHGVRLHLLTSRRGPQAHGAT
 DLQORLTDLGAVTITACDISDPEALAAVNSVPTQHRLTAVVHTAAVLADTPVTELTGD
 QLDQVLAPKIDAAWQLHQLTYEHNLSAFIMFSSMAGMIGSPGQGN YAAANTALDALADYR
 HRLGLPATSLAWGYQTHTGLTAHLTDVDLARMTRLGLMPIATSHGLALFDAALATGQPV
 SIPAPINTHTLARHARDNTLAPILSALITTPRRRAASAATDLAARLNGLSPQQQQOTLAT
 LVAAATATVLGHHTPESISPATAFKDLGIDSLTALELRNTLTHTNTGLDLPPTLI FDHPT
 HAVAEHLLEQIPGIGALVPAPVVIAAGRTEEPVAVVGMACRFPGGVASADQLWDLVIAGR
 DVVGNF PADRGWDVEGLFDPDPDAVGKTYTRYGAFLDDAAGFDAGFFGISPREARAMDPQ
 QORLLLEVWCWEALETAGIPAHTLAGTSTGVFAGAWAQSYGATNSDDAEGYAMTGGATSVM
 GRIAYTLGLEGPATITVDTACSSSLVAIHLACQSLRNNEQLALAGGVTVMSTPAVFTEFS
 RQRLAPDGRCKAFAATADGTGFGEAAVLVLERLSEARRNNHPVLAIVAGSAINQDGAS
 NGLTAPHGPSQQRVINQALANAGLTHDQVDAVEAHGTGTTLGDPPIEASALHATYGHHTP
 DQPLWLGSIKSNIGHTQAAAGAAGVVKMIQAI THATLPATLHVDQPSPHIDWSSGTVRL
 TEPIQWPNTDHPRTAAVSSFGISGTNAHLILQQPPTPDTTQTPTNTTTGSDPAVGSDPAVG
 VLVWPLSARSAPGLSAQAARLYQHLSAHPDLDPIDVAHSLATTRSHHPHRATITTSIEHH
 SENNHDTTDALAALHALANNGTHPLLSRGLLTPOGPGKTVFVFPQGGSQYPMGADLYRQ
 FFPVFAHALDEVAALNPHLDVALLEVMSQDDTAMAQLLDQTFYAQPALFALGTALHRLF
 THAGIHPDYLLGHSIGELTAAYAAGVLSLQDAATLVTSRGRMQSCTPGGTMLALQASEA
 EVQPLLEGLDHAVSIAAINGATSIVLSGDHDSLEQIGEHFITQDRRTRLQVSHAFHSPH
 MDPILEQFRQIAAQLTFSAPTLPILSNLTGQIARHDQLASPDYWTQQLRNTVRFHDTVAA
 LLGAGEQVFLELSPHPVLTQAITDTVEQAGGGGAAPALRKDRPD AVAFAAALGQLHCHG
 ISPSWNVLYCQARPLTLPTYAFQHORYWLLPTAGDFSGANTHAMHPLLDTATELAENRGW
 VFTGRISPRTPQWLNEHAVESAVLFPGTGFVELALHVADRAGYSSVNELIVHTPLLLAGH
 DTADLQITVTDTDMDGRQSLNIHSRPHIGHDNTTTTGDEQPEWVLHASAVLTAQTTDHNHL
 PLTPVPWPPPGTAAIEVDDFYDDLAAQGYNYGPTFGQVQRIWRDHATPDVIYAEVELPED
 TTDIDGYGIHPALFDAALHPLLALTQPPNTDDTNTADTGDQVRLPYAFTGISLHATHAT
 RLRVRLTRTGADAITVHTSDTTGAPVAIIDSLITRPLTTATGSAPATTAAGLLHLSWPPH
 PDTTDTDTDDALRYQVIAEPTQQLPRYLHDLHTSTD LHTSTTEADVVPVPSNEE
 LQAHQASDTAVSSRIHTLTRQTLTVVQDWLTHPDTTGTRLVIVTRHGVSTSAHDPVPDLA
 HAAVWGLIRSAQNEHPGRFTLLDNTNSDTLTALTLP TRENQLAIRRDTIHIPRLTR

FIGURE 14(continued)

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HSSDGALTAPVVVDPEGTVLITGGTGTGLGALFAEHLVSAHGVRHLLLTSSRRGPQAHGATD
 LQQRLLDLGAHVTTITACDISDPEALAAVNSVPTQHRLTAVVHTAAVLADTPVTELTGDQ
 LDQVLAPKIDAAWQLHQLTYEHNLSAFIMFSSMAGMIGSPGQGNIAAANTALDALADYRH
 RLGLPATSLAWGYWQHTGLTAHLTDVDLARMTRLGLMPIATSHGLALFDAALATGQPV
 IPAPINTHTLARHARDNTLAPILSALITTPRRRAASAATDLAARLNGLSPQQQQQTLATL
 VAAATATVLGHHTPESISPATAFKDLGIDSLTALELRNTLTHNTGLDLPTLIFDHPTPH
 ALTQHLHTRLTQSHTPVGPASLLSHAIDEGKFRAGADLLMAASNLNQSFSNMAELNQLP
 AVTDIADASPDGLLTLCISTSENEYARLAAANIHSALTFAEIAAPGFYDAQLPNSIETSA
 EALATAITGAYANTSIVLVAHSIVCELAQATMTRLQDADIDLVLVLLDPLEGTNSTEDY
 VETVLTRIEHINAPRVGVDGYLAALGRYLQFHEDRRIPIPETRHMTLHSDTKIDRAQTPM
 NLLQDEAALTALKIGNWMNDVGVALSVNLE*

FIGURE 14(continued)

Mup045 protein

VIWNDIYISGTGRFIPSMRPINDIQVDGVPNDHTIVQSDYISFTEADEPATVMATRAATE
 ALTTSELVSADVGVLIIYAAIIGDAHHFAPVCHVQRVLRAPDALAFELSAASNGGTQGI
 AANLMTADASVKAALVCTAYRHPIDIISRWSSGMVFGDGAAAVALSRDGGMVRLISGYH
 SLPELEVLARNRSNERLGFVLPDVGLGKYLTAIARMYQAVIAQVLEEAQTSIAEIDYFGL
 IGIGIPSLTATILEPNGIPVNKTSWGLLRQMGHVACDPLLSLNHLFEQNVLRGDKVLL
 LGGGVGYRLTCIVAEIAMNPGVPGHSTS*

FIGURE 15

Mup053 protein

VRQRLNWIAAHGLLRGTARLAARLGDVQSRLVADPMVMANPAPFCDELRAIGPVVSSYGT
 HLVVSHAIAHELLRSEDFEVVSLSGNLPAPMRWLERRTRDDTPHLLLPSSLAVEPPNHT
 RYRKAVSSVFTPKAVAGLRDHVEETASALLDQLTDQASAVDIIARYCSQLPVAVICDILG
 VPSRDRNRVLKFGQLAGPCLDFGLTWRQHQQVRQGLQGLHFWITEHLEELRSNPGDDLMS
 QMIHASENGSSETHLHATEVRMIGLVLGASFATMDLLGNGIQVLLDAPELRDALSQRPO
 LWPNAVEEILRLEPPVQLAGRMARKDTEVAGTAIKRGQLVAIYLGAVNRDPSVFADPHRF
 DITRANANRHIAFSGGRHFCLGAALARVEGEVGLRMLFERFPDVRAAGPGNRRDTRTLRG
 WSQLEPVQLGAARSMAIR*

FIGURE 16

Mup038 protein

MIWVPEVVGSTVVVDVGVAMSALVAEPDQEPKAVILALHGGATNARYFDCPGHRALSLHHT
 GAAAGFTVVALDRPGYGSSAGDPDAMNRP HQRAALAYGALDRILAQRPRGAGVFIMGHSN
 GCELAMWMATETRGAEELGIELAGTGWHYQPEAREILTTATGEHRWVGLYDLLWHPORLY
 PPEVLNAAIISSAPAYEEQMADWTRRTFLELVPVRVPVHFSIAQHEKVWQRDSSALD
 EIAVLFSGAPRFLHEQPEAGHNISLGHTAGDYHTTVLSFVQQLAERLANAQDQVDLAA
 E*

FIGURE 17

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atgccagcac cgagcgtgtt tgtcggcctg gaactcgaca ccaacagtta caccggtgtg 60
ccgtgctgga gcgctggccc cgcacactgg gccacaaca ccgtcgcggt ggcctacgac 120
ctgcgtatc aacagatccg gtcgtgatg tgtgacggcg gcatcgcccg aaaaaccctg 180
atcgctatcg ccgcggccat ggcacgtcac gccgactgga gcaccggccg caactgccgg 240
ccaccaaca accagctcga agccgcgaca ggcttccacc agcgcaccat ccagcggggc 300
cacgaatgcc tacgcctact cggggtggct accgaggtgc tgcgcgccg ccaacgcacc 360
tacatcgagc gcatggcctc ctggagaatg ggcgatcgcc acccgcgctg ggcgtccgtg 420
tgggcactac acgacaacgg cgaggtcgca cgggttgtcc acagcttgct accccacctg 480
gaacggtcct cagtaaccac acacacctca cctaaaacaa gcctgtttac taccaccccg 540
ggcgccacac gcgcccggga aagcggcgct acgcgcgca acagcccaga cgcccggggc 600
cgcgcgactg gcgtcaatg gcgagcagac ccccatgctc ccccatggac tcgtcggtag 660
agcctacga gctggtcagc aatgctcgtc gcccccgcag ccgcaggttg gactgcacgc 720
gacctgaccg cattggtaca agactggctc ggtaccggtc accgaatacc gtccactcca 780
gcgcgcccga tcgcctgct cgcacactg cgcacactg ataccagcca caacagcatc 840
caacaccgcc cagctgcact cgaggaagca cgcgaggccg cagacctggc cgcggttcgc 900
aaacggattc aaaaacaaac cgctgaacac caccgcaacc tcgcgcgcg agaaagccggc 960
cgcgcgcac tggcggtgct cggccaccag gccccagaa ttgctgcccg tctgtgctgt 1020
cgcaacggcg cccgacggcg caccaaaatg gtcgcgcgag aagtagcgag cgtcgatgag 1080
gcgatccggc gggcccgcgg ccgctaacc agcggcctac gctgacagca gttcggtgag 1140
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agctaccggc accagttccg tcagcaagtc gccgcactgg cgaataagag ccggcaactt 1260
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ttcaatagtg cgggatcgct gagccggctc gggcggtac gacatgtaag ccaacttgca 1500
gcaaccctgc tgcgccacac gcgctcatgt aagccagaat tttgtctcgc cccaactccc 1560
atcgcccccc aagaaccgta gagagcaggc tttgaactgc ggatcacgc cgccgttgtg 1620
gcaatgcgcg actggtaaac atgtaagtaa gtttgccata gaacgaggtt ttgcataacc 1680
gatctcgagg cgctgtcac gaaagtggcg caggacttta cttacatacc cctcctcg 1740
caagaatggg accgtgtcat cgcccagcga accgtcggcg tatacgtctc cgatgccc 1800
caagcagttg gcgctcaccg cccagcgcgt gagccaaatg ctgagcagcg gcgagctgac 1860
aggcccgcaa tatccacaac aacgggttcc caagaacgcg gtgcgctctt ggaaatggtc 1920
gctcgaccag gagttggcac gaagaaggta cactcccccg ccacgtcact cagcgagaca 1980
acaaccgcac cccggtgccg atcaggggta cctcgcgcaa tggtagagcc gccgggaagc 2040
gcgctcgaac cgcgctcgcg acgaactcaa agttcgccga gacctcgctc gacagcatgc 2100
cagcgacgag cgctcgaagg cccgacagct gatgtcgaag ctgcgcgac tgaccatcca 2160
gcaggtgtaa ctcatcgaac ggctaaaaga cgacctcgca gtggaatcgg aacgtaccga 2220
acagatcacc tgacatatac ccgatgcctt aaccagctc ctggcccccg acttcggccc 2280
accaccgtga cccgcgatca gcaggtaact caggcgctct tcttgcgggg caggaaacga 2340
ttgagcacag gggcgatcca cgtcgatcgg gtatcgaatc ccaactttga gccgatggtg 2400
tcgatgacct cctcttgctc ggcggtcaga ctaaacgcga tctgcgcgtt gccaccaccg 2460
agatagcgca cggccgaagg gtcggccggg aaaaggctcg gggtaggtgc agtcgagtag 2520
cggctcttct cgatgatctc ggccagttca ccagcctggt acttgatgct gatcgctcc 2580
aaaaccacat gcaaattggt tgacttcacg ttgtgccgat acttctcgaa gcggctcttg 2640
acgccaggac tgacatatac cgccgtggtc ggcttgacc gagtgcgtgg cccggcaggc 2700
ttgctgaggc gcaacttgcc ggccgagaca tcagaggtct tagaggcgtt tgcggcaacc 2760
ggctctgctc caacaggtac ctgcacagca gcctgttcgg gagcactggc gggccgaggc 2820
tgggctcgct tgacagagtc agctagacca gcgcccgcac tcttcggctt tgtgaggtct 2880
gcgagatccg cttcgggcag ctccctcgcc gtttaacttg tcacggccac actccttctg 2940
tgatcaggtc ctggcgatc tttgaacccc gcgtgagaat ttctcgggtc agcttgccga 3000
agtctctggc cacgtcaca gatgtcgtgc tgacgaccgt agtcgcatct gctctcccct 3060
gccgtatcgc tgaccgagac ggattattga cgatttctct ctcaagttcg tgggccaacc 3120
gaccaaactt aggcacgtcc ctgccacag cttctgagtg gcggatgaac gaatcgagca 3180
tcacgtcatc gttctgcccc aaatctgcag ccacattctt cttcatctct tcccggatcc 3240
tcgtcgatga agttcctgac gcaaacacga aacagccgag caacaccaca gatgggttgt 3300
gctcgcgcat cgcccttaga tcgcctgcca actcgcgcag tccggtcctt gataggtcat 3360
cggtcttcat cggaactaca acaaaccgcg acgcacacag ggccgcctga agaagcaact 3420
ggttctccgg aggggaatca atgaagataa ccccgtaatg atcactgac tgtgccaacg 3480
ccagcccgag cgacatcagc acctgtttgg cagctcgcgg gttgccatc tctgcagcca 3540
tcaccggcgc gatccgacgg acgaaaggcc caccgggaac aacatccaat cccggacgga 3600
catcgggaaat cggggtcaac gcagcgccgg cagtaatcgc gctgtagaga ttctaccct 3660
tgtcgtcgcc ttctgtatcc gcgaagccaa gcatgttcgc cagttgccc tggccgttga 3720
gatcgaccaa taaggcgcgc gctccatcgg aggcaacgag cgcggcgctg tgggtagaac 3780
acgtcgactt cctaccacca ccttgccgt tggcgaaacg ataaacattg cccagcttgc 3840
tccaattgac cgcgggttct accagcccag cgtcgtccca aacggctacg cttctactca 3900

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FIGURE 18

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tgcggggcgcc ttactgtgtt ggaatcggga gaatgccgcg cctggcatgc cgcgaccga 3960
accgcactgc accccacgcg ctgtcacggt ctgcagagtc tagggcgatc agctcgggtg 4020
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ccgttttcga tcccgccca tcccgatact tcggcggtca ccttccacca cgacgttct 7800
gcgcccgaac ccgttgagag agagcggttt tcagtgttg catttaccgc ccacgggcct 7860

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FIGURE 18(continued)

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tttgtgctgg	ctcaatgggc	tgatgcgggc	gaaagtgccg	acaagtctgc	ccagttgatac	7920
gccaccaccc	tggagctgca	ggagccggcg	attgacacgt	tcacgccgac	cccgcctgat	7980
cggatctcgg	atctgcccgtt	ggatcccagc	ggatgctgt	cgccgctttt	gccgcccag	8040
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caggtggatg	ggacccctga	cggtacgtgat	gagtgccccg	tagccaacac	cggtcgcccc	11760
cgcgcccgca	gtggcccacg	cccagttggg	ttgggacaca	aagtgcgcaa	cgaagccaat	11820

FIGURE 18(continued)

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tgccgccacg	acaagtcgtg	cccacaagcc	cgagatcaac	accgtgcct	gctctcggtg	11940
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tctgtggccc	caccacccat	ggcgtttcaa	cccggttttg	gtcgggctcc	aggctggccg	15660
tatccaccgg	ccacacccaa	cactgccccg	catcgcgctg	cagcacgcat	cgccgcgcga	15720
gtagtcggcg	cagcgctcgc	agtgatcgcg	ctgatagtgc	tcatcaccac	cgctcgccga	15780

FIGURE 18(continued)

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tcaacaaac	cgggcgccgc	cctcaccac	accacaccga	ctgtctcagc	acagccaccg	15840
tcactacga	cgaccccgcc	cccgccccc	cccacccgac	cggcagccct	ggcagggtcg	15900
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FIGURE 18(continued)

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FIGURE 18(continued)

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ccgcaagtta	tccggcagca	gcgtgagcag	ggcacatacg	cagggaattt	cattgctttt	27660

FIGURE 18(continued)

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ctcggcgaca	gcgagttgac	cgagcaccaa	tcggggcacgg	tggggcgaaca	ccgacacgag	27720
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cggcaccaat	ccactggggt	cgctgctggc	cacgtgtgca	gtgaagtaac	tgccccatcct	27840
ggcggttgagg	tcggcggggt	ctagccgaga	caaaacagcg	cggaaggtct	tctcactggg	27900
ccgccggaac	cggaccacct	cttggggcaa	cacatcatcg	gaagcggtgg	ccgccccatgt	27960
ggcaaaacca	gcatagccgc	gcatccccgc	ggcagtgggc	agaaccgcga	tcgccaacaa	28020
agccatcagc	gaatacctcc	gaccgcgtgg	gtccctcggg	tctggcaccg	aggccaacac	28080
atcgagaaac	tccgatccga	tgagctcgct	gcgctcacca	gcactccagc	ggtcgaacac	28140
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gacgaacagt	aaccaactcg	atcgttctcc	agatagcccg	tgctacact	ccggcccca	28260
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attttggggg	ccagcacctg	gtcgagttga	tcgcccgtca	actcggtgac	cggggtgtcg	31620

FIGURE 18(continued)

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cctagatcgg tgagccgctg ctgcagatcg gtggcaccgt gggcctgagg tccgcgccgc 31800
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accgcggcgc cttaccacaa gccggtgcca cggcggtgaa aaaccgcagg tgtgctcatc 35580
ccatctgggg ccaggccggc ttggcgggag aactcgtgta

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FIGURE 18(continued)

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acggtgacgc cgccggccag tgctagctgg gattcgttgt tgcgtaagga ttggcaggcc 35640
aggtgaattg ccaccagcga tgacgagcag gcggtgtcaa cggtgatcgc tggaccttct 35700
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ccgtccacc gtcgagcag ctgggtcagt ggttcctcgg gcgtagcac tgaagccatg 39540

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FIGURE 18(continued)

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FIGURE 18(continued)

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FIGURE 18(continued)

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FIGURE 18(continued)

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FIGURE 18(continued)

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FIGURE 18(continued)

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FIGURE 18(continued)

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FIGURE 18(continued)

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FIGURE 18(continued)

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gccactgcca	tacccagccc	gatcgtggcg	gtcatatcca	aggtgctcgg	acagttccctc	76020
atccaaagcg	atctcaatga	ccgttttgggt	catcgccctg	agcaatccgc	caggcccggt	76080

FIGURE 18(continued)

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taaccaacacg	ccggcctcgc	gggcctggcg	caccaactcg	cgggcgactt	ctaactcatc	76140
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FIGURE 18(continued)

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cgtcctcgcc	ttgtgaccaa	ggtggctgcg	tcttgacagt	acagcacacc	ggcggcgat	84240

FIGURE 18(continued)

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FIGURE 18(continued)

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FIGURE 18(continued)

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FIGURE 18(continued)

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ccacggcaca	ggcgttaggg	ggaggtggtt	gtggtcgggtg	gtttgtgcgg	tcaggactgc	100560

FIGURE 18(continued)

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FIGURE 18(continued)

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FIGURE 18(continued)

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FIGURE 18(continued)

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FIGURE 18(continued)

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FIGURE 18(continued)

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FIGURE 18(continued)

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FIGURE 18(continued)

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gctgcggatc	aggccccaca	ctcgcgcggt	ggctaggtcg	gggaccgggt	cgtagggcact	133200

FIGURE 18(continued)

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ggtgctgacg	ccgtggcggg	tcacgatgac	cagtcgggtg	ccggtggtgt	cggggtgagt	133260
gagccagtc	tgcaccacgg	taagtgtttg	gcggttcagg	gtgtgtatcc	gagaagacac	133320
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cacaaccacg	tctgcttcgg	tgggtgctgg	gtgcaggctg	gtgctggtgt	gtaggtcgtg	133440
caggtagcgg	ggcagttgtt	gagtggttgc	ggcgatcacc	tgataccgca	gggcacgtgt	133500
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FIGURE 18(continued)

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FIGURE 18(continued)

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acggcgcaatc	ggccaagtac	tggtcgacgg	tgctgacgga	gttgaaaaac	cgcggcggtg	145440
ccgacatctt	cttccctggtc	tgtgacggcc	tcaaggagct	gccggactcg	gtgagcgccg	145500

FIGURE 18(continued)

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FIGURE 18(continued)

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FIGURE 18(continued)

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FIGURE 18(continued)

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FIGURE 18(continued)

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FIGURE 18(continued)

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FIGURE 18(continued)

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FIGURE 18(continued)

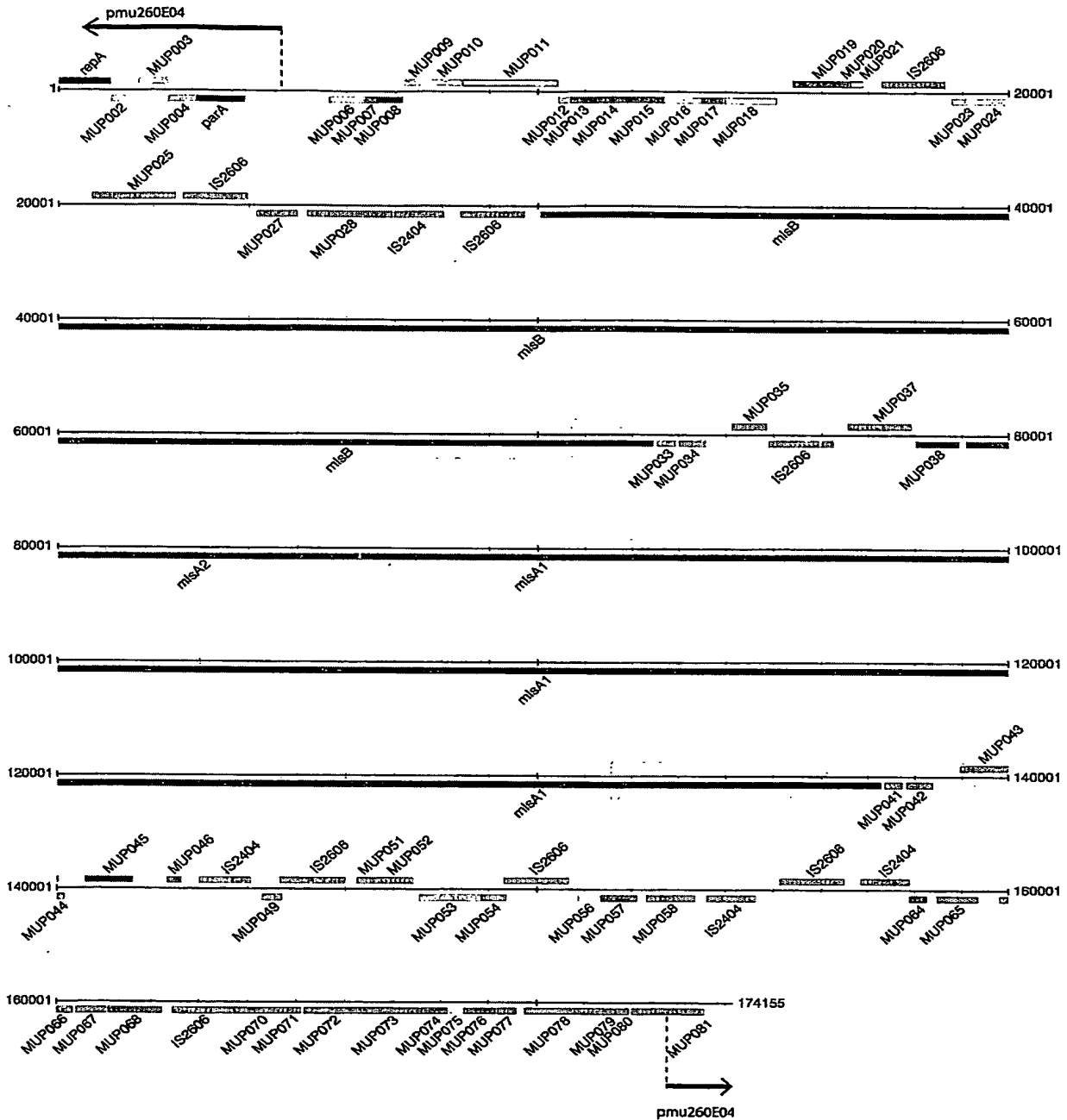


FIGURE 19

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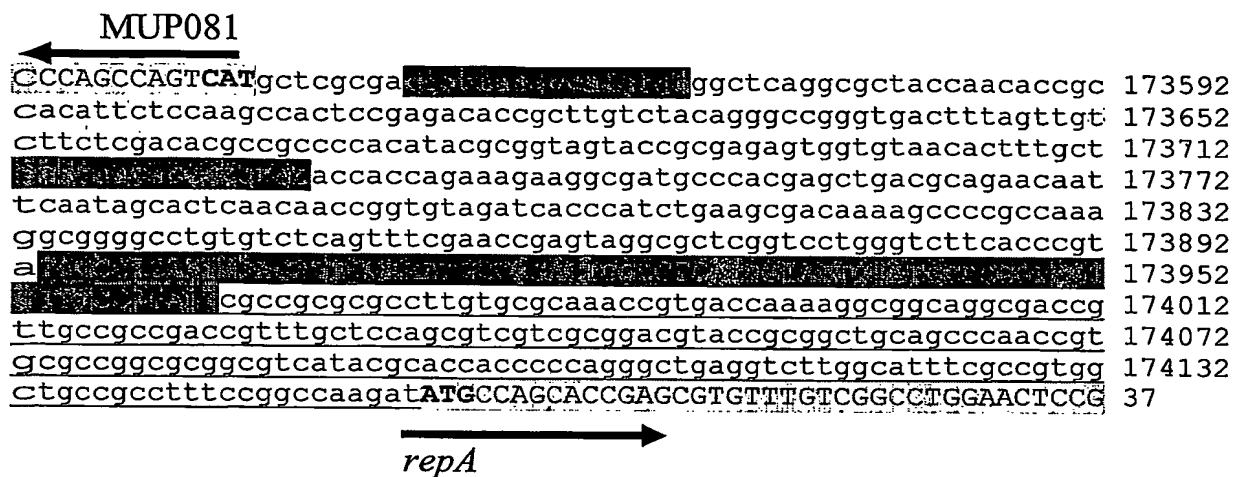


FIGURE 20

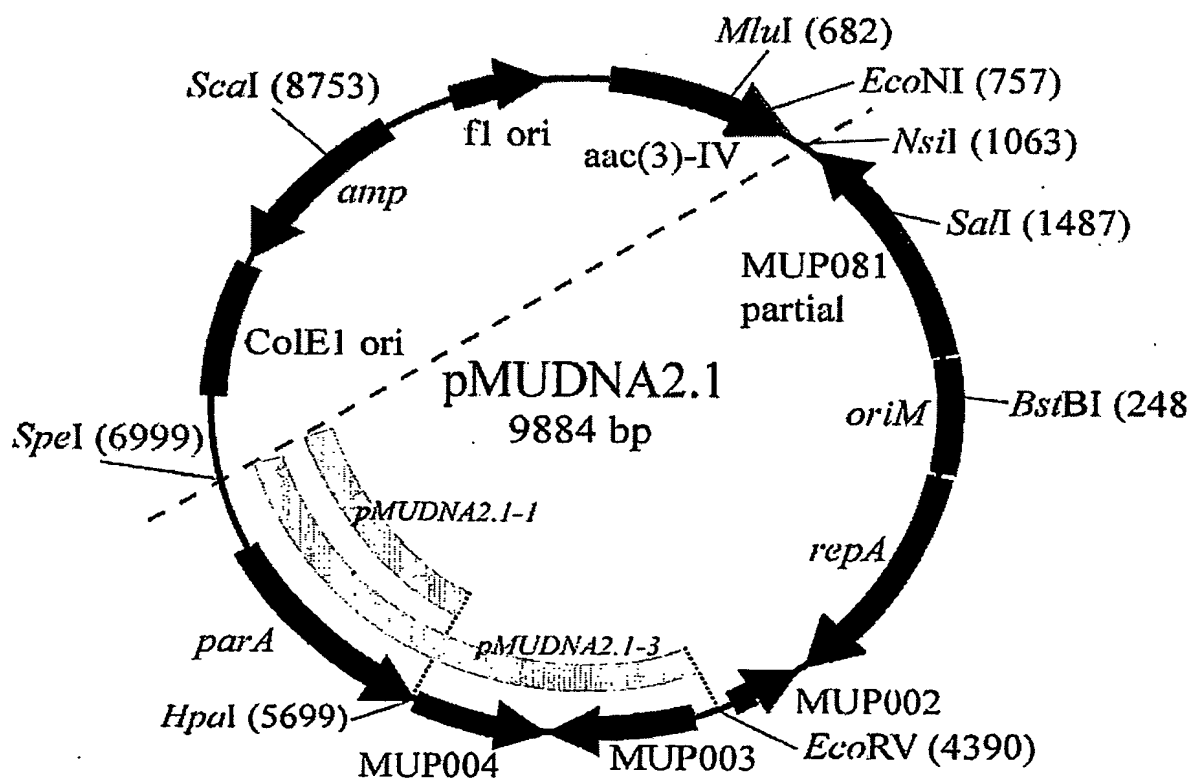


FIGURE 21

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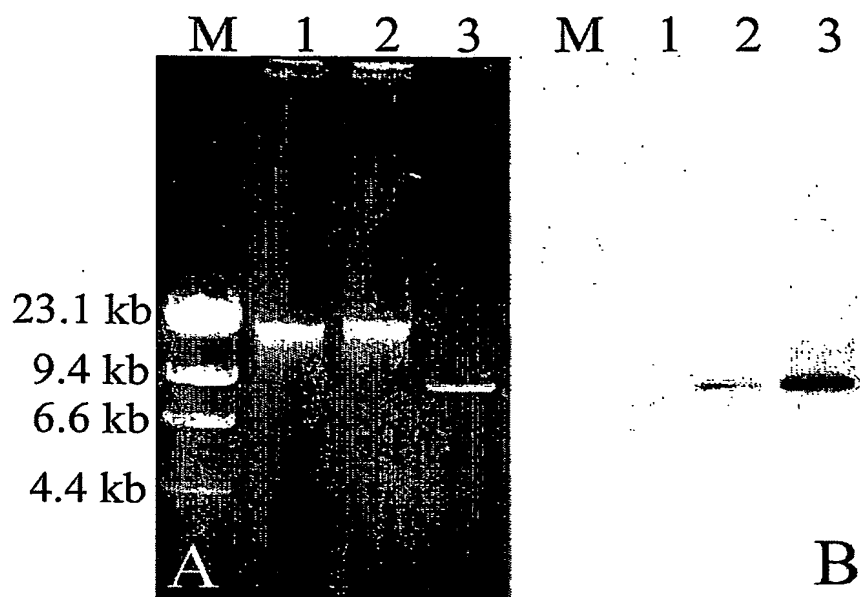


FIGURE 22A

FIGURE 22B

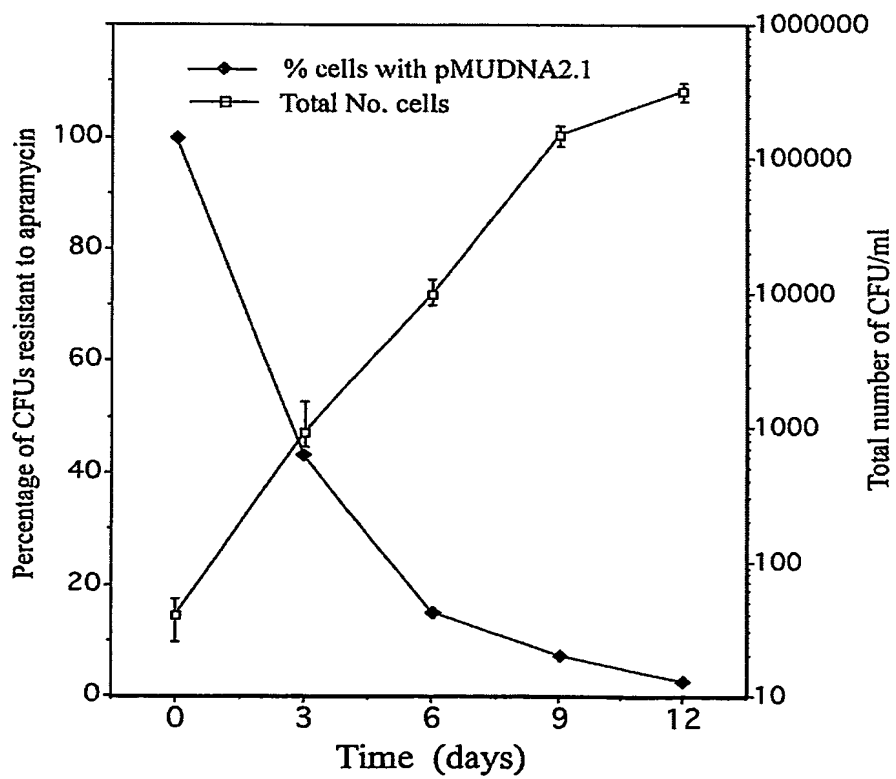


FIGURE 23

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AGCGCAGGGCGGGGGTGGCCAGGCAGGGC...GCCCTGGTGGCCAGGTATGGCT [SEQ ID NO.:59] 10 bp
CGGCGCGGGTTGCTGCGGCGGCAGGGC...GCCCTGCCGCGGCGGCAAGTCGG [SEQ ID NO.:60] 10 bp
AACACCGCATTCCTCCGGTCACCAGGGC...GCCCTGCCCGGTCAACCGCCGCCG [SEQ ID NO.:61] 10 bp
GGCAACGGATCTAGCCGGGGTGAGGGC...GCCCTGAGCCGGGGTGACAGTCGG [SEQ ID NO.:62] 10 bp
CGAGGCCATCGCCATCGCCGCCGAGGGC...GCCCTGCATCGCCGCCGAACCCT [SEQ ID NO.:63] 10 bp
ACGATGCCGGAGAAATCTCAGCGAGGGC...GCCCTGAAATCTCAGCGCCGGGGG [SEQ ID NO.:64] 10 bp

FIGURE 24

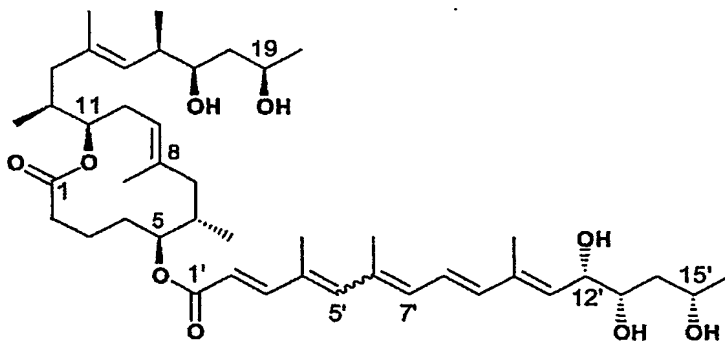


FIGURE 25

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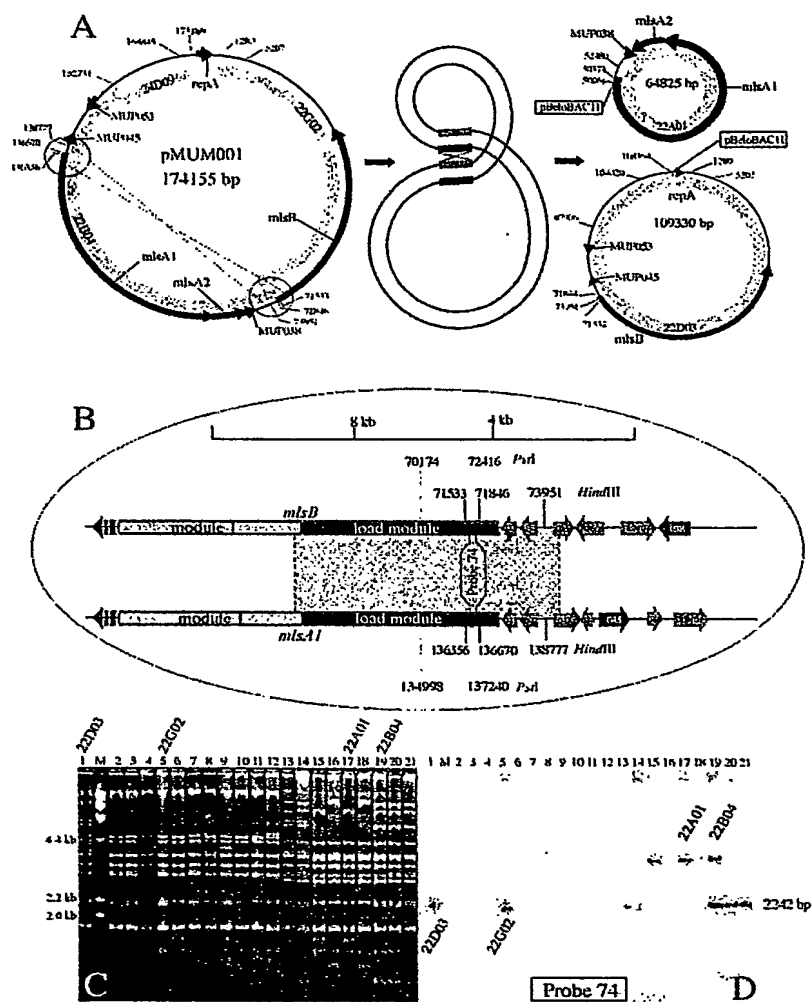


FIGURE 27A - FIGURE 27B - FIGURE 27C - FIGURE 27D

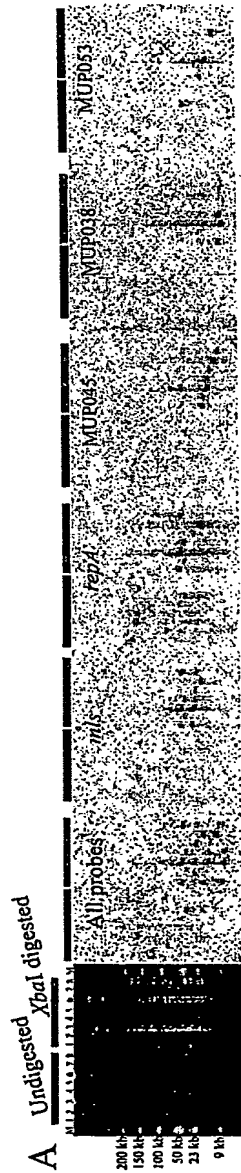


FIGURE 28A

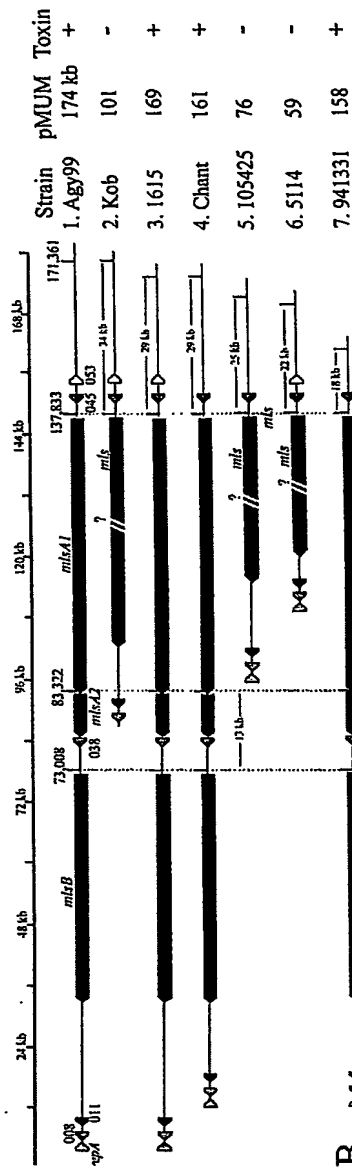


FIGURE 28B

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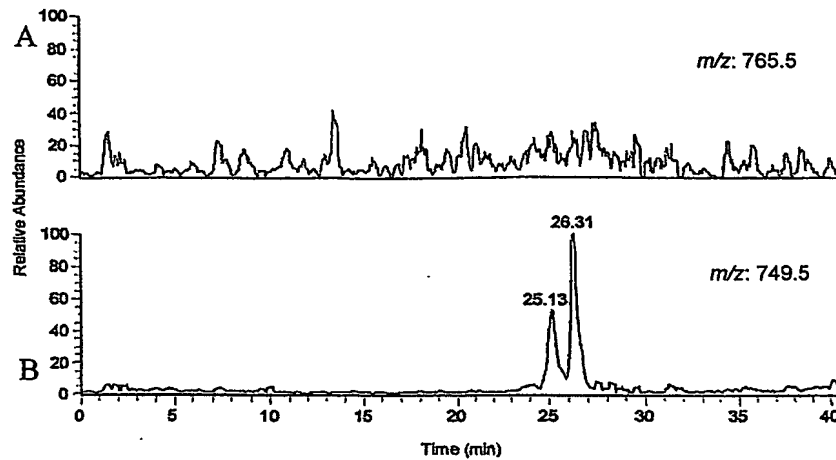


FIGURE 29A - FIGURE 29B

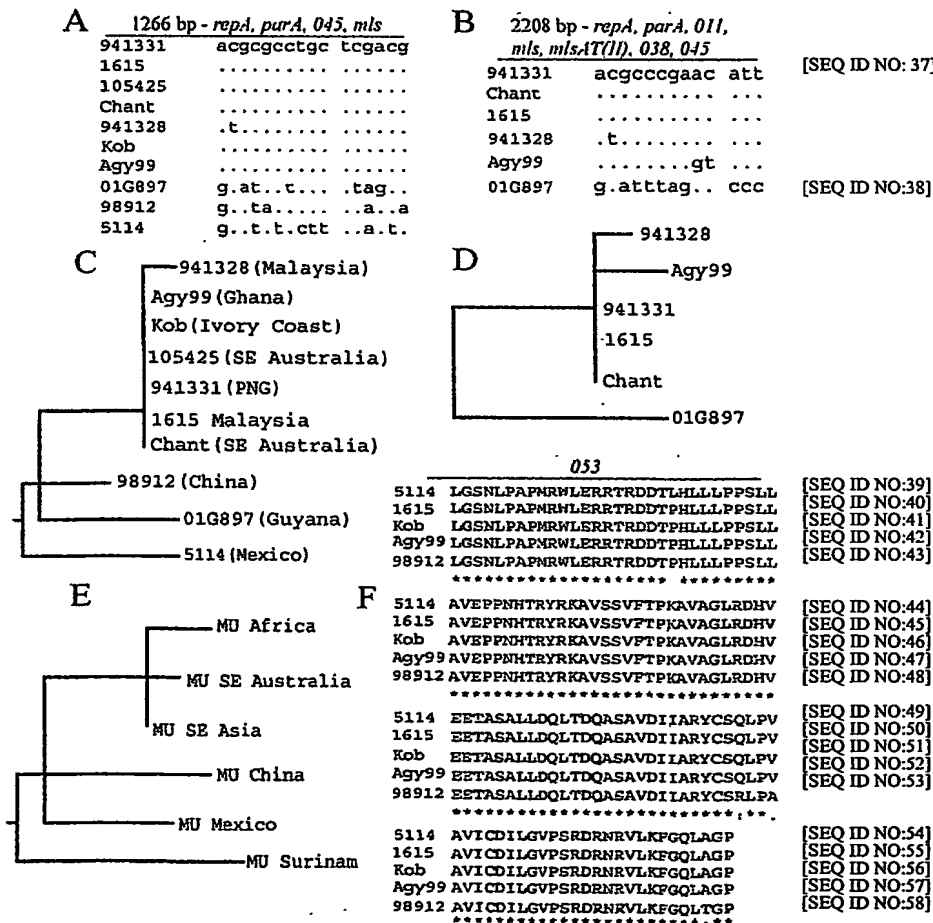


FIGURE 30A - FIGURE 30B - FIGURE 30C - FIGURE 30D - FIGURE 30E - FIGURE 30F

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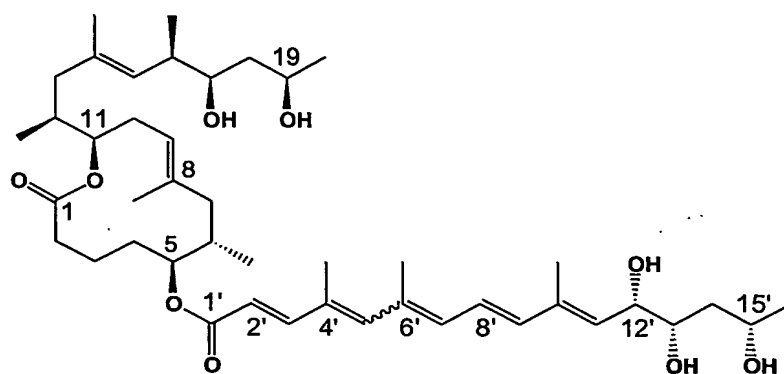


FIGURE 31A

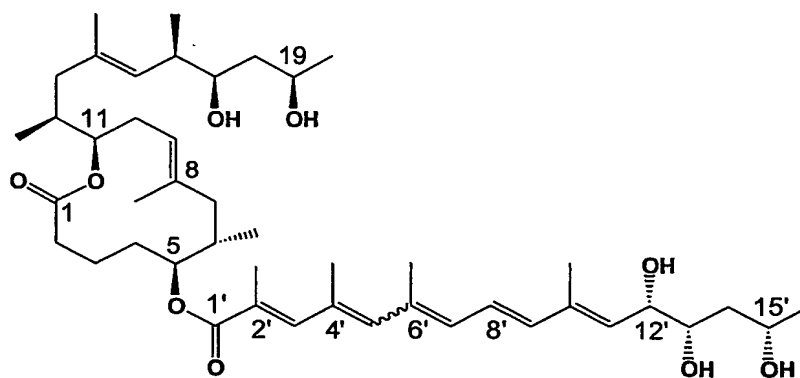


FIGURE 31B

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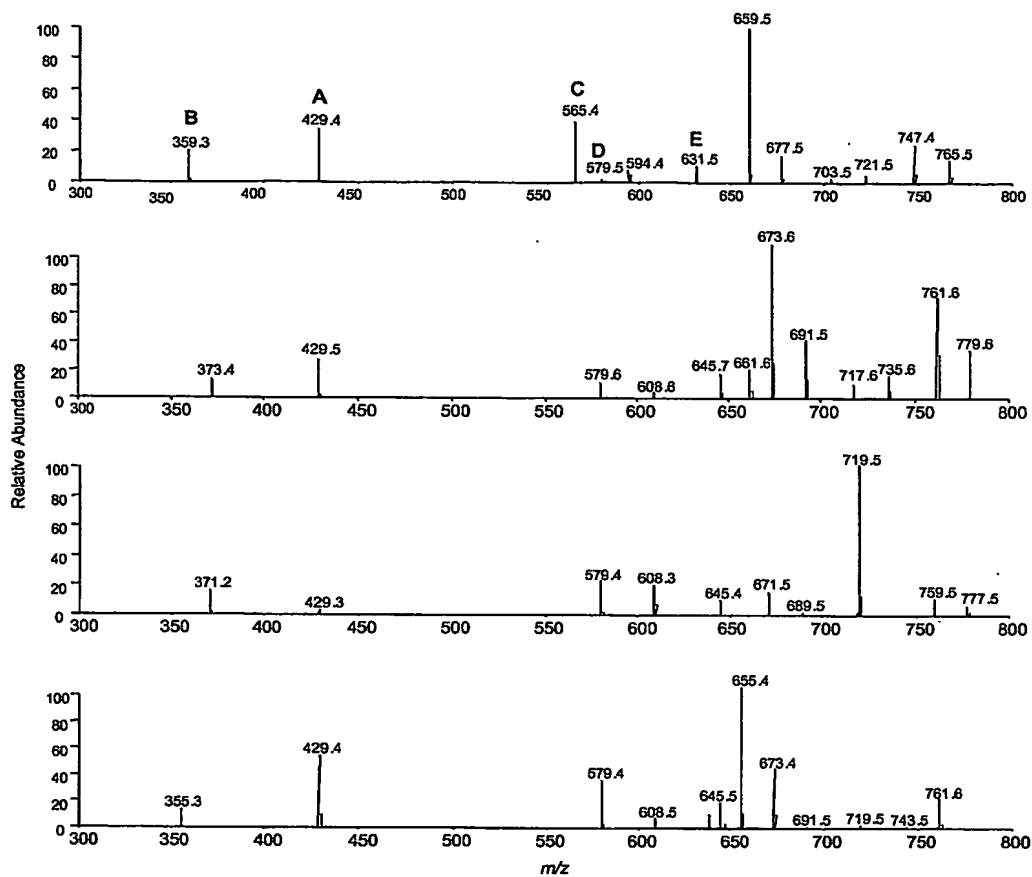


FIGURE 32

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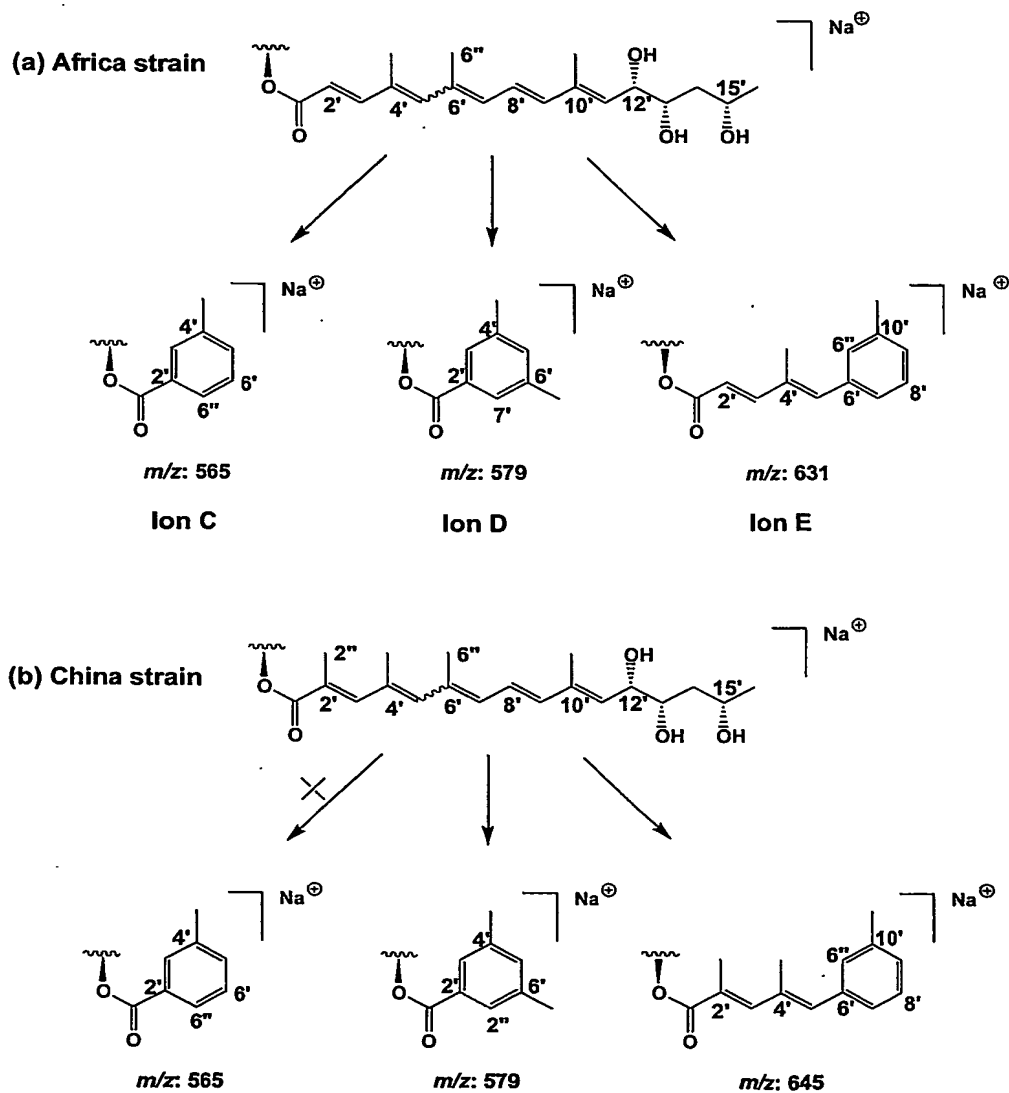


FIGURE 33

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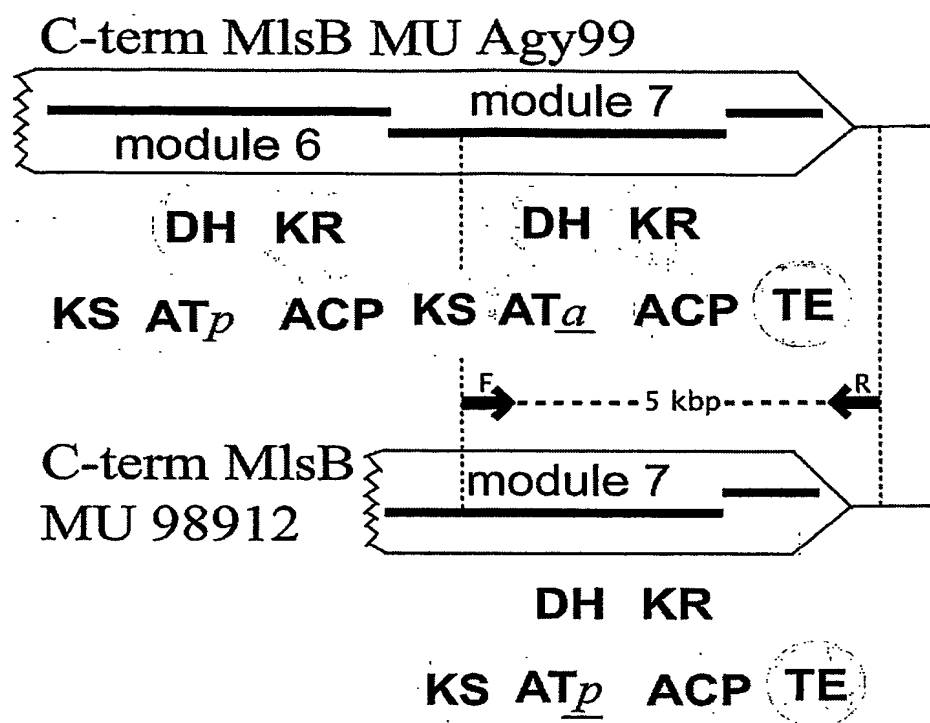


FIGURE 34

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Agy99 - AT6 PHRATITTSIEHHSENNHDTTDLAALHALANNGTHPLLSRGLLTPQGPVKTVFVFPQCG
98912 - AT7 PHRATITTSIEHHSENNHDTTDLAALHALANNGTHPLLSRGLLTPQGPVKTVFVFPQCG
Agy99 - AT7 PHRATITTSIEHHSENNHDTTDLAALHALANNGTHPLLSRGLLTPQGPVKTVFVFPQCG
*****

Agy99 - AT6 SQYPGMGADLYRQFFVFAHALDACDAALQPTGWSVLAVLHDE--PEAPSLERVDVVP
98912 - AT7 SQYPGMGADLYRQFFVFAHALDACDAALQPTGWSVLAVLHDE--PEAPSLERVDVVP
Agy99 - AT7 SQYPGMGADLYRQFFVFAHALDEVAAALNPHLDVALLEVMSQODTAMAQLLDQTFYAP
*****

Agy99 - AT6 VLFSVMVSLAALWRWAGITPDAVIGHSGQGEIAAAHVAGALTPEAAAVVALRSRVLTDLA
98912 - AT7 VLFSVMVSLAALWRWAGITPDAVIGHSGQGEIAAAHVAGALTPEAAAVVALRSRVLTDLA
Agy99 - AT7 ALFALGTALHRLFTHAGIHPDYLIGHSIGELTAAYAAGVLSLODAATLVTSRGLMQSCIT
***: .:* *: *** ** :*** ** :*** ** :*** ** :*** ** :*** ** :*** **

Agy99 - AT6 GAGAMASVLSPEEPLTQLLARWDGKITVAAVNGPASAVVSGDTTATITELLTCEHENIDA
98912 - AT7 GAGAMASVLSPEEPLTQLLARWDGKITVAAVNGPASAVVSGDTTATITELLTCEHENIDA
Agy99 - AT7 PGGTMLALQASEAEVQELLEGLDHAVSIAAINGATSIVLSGDHDSLEQIGEHFITQDRRT
*: * :. :. * : ** * :. :*** ** :* :*** ** :. :

Agy99 - AT6 RAIPVDYPSHSPYMEHIRHQFLDELPELTTPRPSTIAMYSTVDGEPHDTAYDTTMTADYW
98912 - AT7 RAIPVDYPSHSPYMEHIRHQFLDELPELTTPRPSTIAMYSTVDGEPHDTAYDTTMTADYW
Agy99 - AT7 TRLQVSHAFHSPHMDPILEQFRQIAAQLTFSAPTLPILSNLTG--QIARHDQLASPDYW
: * :. ***: * : * :. :*** ** :. : * :. : * :. : * :. : * :. : ***

Agy99 - AT6 YRNIRNTVRFHDTVAALLGAGEQVFELESPHPVLTQAITDVEQAGGGGAAPALRKDRP
98912 - AT7 YRNIRNTVRFHDTVAALLGAGEQVFELESPHPVLTQAITDVEQAGGGGAAPALRKDRP
Agy99 - AT7 TQQLRNTVRFHDTVAALLGAGEQVFELESPHPVLTQAITDVEQAGGGGAAPALRKDRP
: : *****

Agy99 - AT6 DAVAFAAALGQLHCHGISPSWNVLYCQARPLTLPTYAFQHORYWLLPTAGDFSGANTHAM
98912 - AT7 DAVAFAAALGQLHCHGISPSWNVLYCQARPLTLPTYAFQHORYWLLPTAGDFSGANTHAM
Agy99 - AT7 DAVAFAAALGQLHCHGISPSWNVLYCQARPLTLPTYAFQHORYWLLPTAGDFSGANTHAM
*****

```

FIGURE 35

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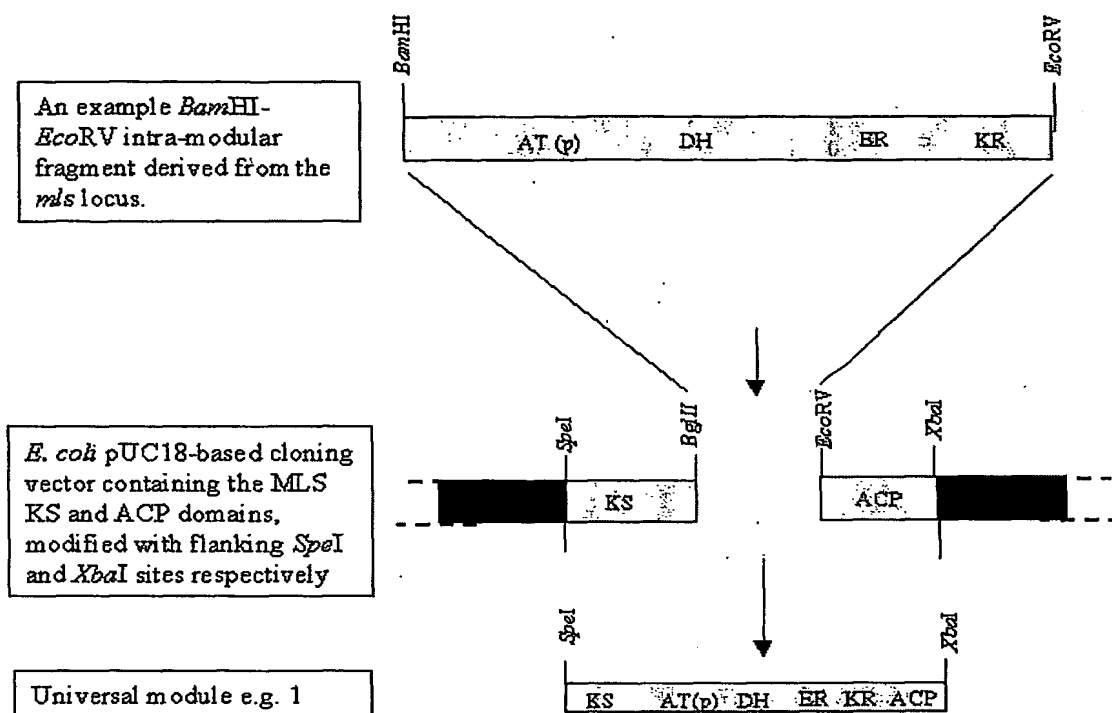


FIGURE 36

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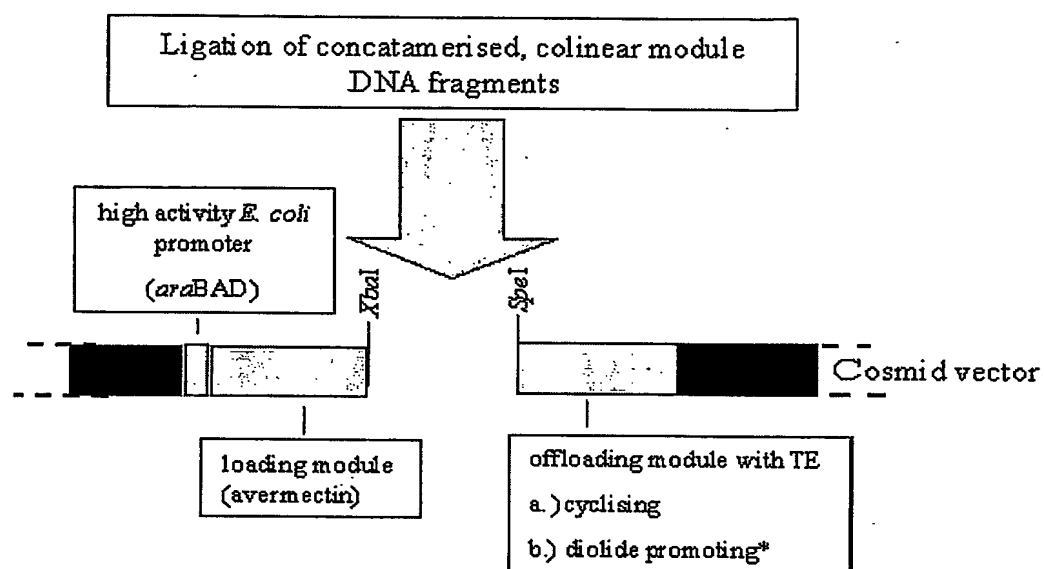


FIGURE 37

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